Faculty of Arts Conference 2007
Proceedings of the 2nd Annual Conference

Theme
Local and global issues in research in Humanities and Social Sciences

Editors
Dennis N. Ocholla, Thandi Nzama and Catherine Addison
Proceedings of the Faculty of Arts 2nd Annual Conference
2007

Theme

“Local and global issues in research in Humanities and Social Sciences”

Editors

Dennis N. Ocholla, Thandi Nzama and Catherine Addison

University of Zululand
2007
Foreword
The Faculty of Arts Research Committee organized the second conference on the theme “Local and global issues in research in Humanities and Social Sciences” at the University of Zululand, Arts Auditorium, on the 18th June 2007. The aim of the conference was to provide an interdisciplinary platform for sharing knowledge on research activities and related scholarly and academic work by staff and students in the humanities and social sciences. The conference objectives were to:

- Share scholarly knowledge among staff in the humanities and social sciences
- Popularize research and dissemination of research results
- Provide a platform for networking among staff and students
- Promote and encourage constructive scholarly debate
- Enable free interaction and exchange of ideas
- Provide a forum where staff and students can showcase their research output and academic work
- Provide an interface and interactive environment for disseminating and filtering research outcome before publication in scholarly journals
- Enable the creation of a faculty research open access repository for interdisciplinary research output in humanities and social sciences
- Promote knowledge sharing and transfer through open discussions.

Sub-themes
- Knowledge Management
- Indigenous Knowledge Systems
- Information, Communication and Technology
- Information and Knowledge Society
- Community Psychology
- HIV/AIDS
- Rural Development
- Politics and Public Administration
- Criminology
- Inter-cultural Studies/Cultural Diversity
- Sustainability as Model for Development
- Socio-economic systems and regional development
- Diversity in literature and cultural studies
- Recreation and Tourism

We hope to extend the geographical and thematic scope of this conference in the future.

I wish to thank the organizers of this conference and also wish the participants a great conference.

Prof. N. Makunga, Executive Dean, Faculty of Arts.
June, 2007
Conference and Programme Chair

Prof. DN Ocholla – docholla@pan.uzulu.ac.za
Dr. Thandi Nzama
Prof. Catherine Addison

Programme Committee

Prof. C. Addison · English
Prof. Steve Edwards · Psychology
Prof. TAP Gumbi – Social Work
Prof. LZK Khumalo – Isizulu Namagugu
Prof. J. Le Roux · Library and Information Science
Prof. NV Makunga · Psychology
Prof. MV Mpepo · English
Prof. S. Mtshali – Rural Development
Dr. HSB Ngcobo · Psychology
Dr. Thandi Nzama – Recreation and Tourism
Prof. DN Ocholla – Library and Information Science
Prof. PJ Potgieter – Criminal Justice
Prof. JM Ras – Criminal Justice
Dr. H Rugbeer – Communication Science
Prof. De Villiers · History
Prof. E. Wait · Philosophy
Contents

Chapter One: Diversity in Literature and Cultural Studies

‘Narrator’s Identity and Stanza Form in the Venice Sections of Childe Harold IV and “Beppe”’ .......................................................................................................................................................... 1

Addison, C.

The Violated Woman as Emblem of the Nation in “J. M. Coetzee’s” Disgrace, Zoe Wicomb’s David’s Story, and Achmat Dangor’s Bitter Fruit ........................................................................................................................................................................... 7

Gane, G.

Understanding Virtue Ethics ................................................................................................................................................................................................. 12

Koenane, M. J.

Landscape and the Anti-Pastoral Critique in Doris Lessing’s African Stories ................................................................................................................. 16

Louw, P.

The Function of Sociocultural Characteristics in English Language Teaching in ESL Situations .................................................................................................................. 21

Mpepo, M. V.

Chapter Two: Knowledge Management and Indigenous Knowledge Systems

Publication and Cooperation Patterns of Authors of Natural Sciences in South Africa .............................................................................................................. 30

Jacobs, D.

Auditing the Indigenous Knowledge Systems in South Africa: Challenges and Opportunities ................................................................................................... 39

Njiraine, D.; Ocholla, D. N.; Leroux, C.B.J.

Marginalized Knowledge: An Agenda for Indigenous Knowledge Development and Integration with Other Forms of Knowledge .................................................................................................. 55

Ocholla, D. N.

Research in Library and Information Science in South Africa: an analysis of journal research output from 1993-2006.8 ................................................................................................................................. 65

Ocholla, D. N. and Ocholla, L.

What are the Future Prospects of Knowledge Management? An Audit of the Subject Domain’s Scholarly Publications and Research .............................................................................................................. 81

Onyancha, Bosire Omwoyo
Is it Necessary for Academic Librarians to Conduct Research and
Publish? .................................................................................................................. 96
Sitenei, G.

Chapter Three: LIS Education, Information Seeking and Application of
Information and Communication Technologies
An Exploratory study of the Marketing of Library and Information Services: A Comparative
Study of the Mzuzu University and University of Zululand
Libraries .................................................................................................................. 117
Chipeta, G.
Challenges and opportunities facing ICT and rural development initiatives amongst
South African and Kenyan rural women .................................................................... 127
Kwake A. K.

The Teaching and Learning of Information Ethics in Library and Information Science
Departments or Schools in South Africa: A literature Review ..................................... 139
Ndwandwe, S
A comparative Analysis of Web Information Seeking Behavior Among Students and Staff at
the University of Zululand and Durban University of Technology .............................. 149
Nkomo, N
ICTs in secondary educational institutions in the uMhlathuze municipality: an investigation
into their utilization, impact and challenges .................................................................. 164
Ntetha, M and Mostert, J
Chapter Four: Sustainability as a Mechanism for Development/Recreation and
Tourism
Building a Sustainable Competitive Organization: Strategies Thereof .......................... 175
Buijs, G
The Role of Rural Women in Sustaining Small-scale Community Development Problems and
Successes: A case study of KwaNday Production Centre Umbumbulu KwaZulu-Natal ...... 189
Hadebe, Mendi
“The boldest, most comprehensive strategic plan on AIDS in the world”1 fails to address
gender” ...................................................................................................................... 194
Jordaan S

1 Zwelinzima Vavi (in South Africa Info, 15 March 2007), General Secretary of COSATU on the new HIV/AIDS/STI
Strategic Plan 2007-2011 of South Africa
Evaluation of Reunification Programmes Rendered by Service Providers with Respect to Street Children and their Families/Households .................................................. 202
Magagula, S.J.
The Provision of Recreation Facilities for the Youth in Umlazi Township .............. 209
Ngcobo, N.R.
Systems Thinking and Learning Organization Framework: The Strategic Logic of Sustainable Competitiveness in Organizations ......................................................... 231
Nhlabathi SS
Juvenile Diversion in Search of a new Paradigm through to Community justice... ........243
Zondi, C. Z.
Narrator’s Identity and Stanza Form in the Venice Sections of Byron’s Childe Harold IV and “Beppo”

Catherine Addison², caddison@pan.uzulu.ac.za, 
Department of English, 
University of Zululand, 
South Africa

Positioning himself dramatically in the heart of the city of Venice at the beginning of Byron’s Childe Harold's Pilgrimage Canto IV, the narrator declares:

I stood in Venice, on the Bridge of Sighs; 
A palace and a prison on each hand: 
I saw from out the wave her structures rise 
As from the stroke of an enchanter’s wand: 
A thousand years their cloudy wings expand 
Around me, and a dying Glory smiles 
O’er the far times, when many a subject land 
Look’d to the winged Lion’s marble piles, 
Where Venice sat in state, throned on her hundred isles! (CH 4.1)

This speaker is very conscious of himself as the prophetic bard who, though recounting an event anchored in the material world, in a specific, famous place, is nevertheless able to command a pageant of past years imaginatively transformed and compressed into winged beings accompanied by a personified Glory and presided over by the equally winged Lion of St Mark’s. In the next few stanzas he extends his vision to include fictional as well as historical worlds when he mentions “Shylock,” “the Moor” and “Pierre” (4.4) in addition to “Suabian” and “Austrian” emperors, the poet Tasso and Dandolo, twelfth-century Doge of Venice (4.4-12).

The reader who has progressed through Cantos I, II and III of Childe Harold is not especially surprised at the narrator’s assumption of this vatic posture here, since she has already witnessed his growth into a transcendental presence, dominating all other identities in the poem. The putative hero, Childe Harold, apart from a brief reference to his longing for a specific “soft breast” (3.53-55), has shrunk by Canto III to a cardboard cutout, toed about and set up now and then in the foreground of a scene over which the narrator is preparing to fulminate. And, in fact, in the later parts of Canto III, Harold has not been mentioned for over sixty stanzas, so his absence here is not noteworthy. The narrator, having dropped the mask of ironic moralist assumed in the first few stanzas of Canto I, mostly and increasingly speaks in the voice of an elegiac visionary who, meditating in the high style upon the ruined but real things of this world, is flooded by images of other, lost, worlds, which cascade into his discourse with a fluency that often appears to carry all before it in its passionate intensity. He is perceptive, bitter, caring, occasionally ironical, but hardly ever comic.

In striking contrast, the narrator of “Beppo” is a very amused—and amusing—subjectivity, a listener to gossip and travellers’ tales, a frequenter of the Ridotto—at least when he is feeling “hippish” (see stanza 64 on the sheet)—full of a rueful self-knowledge which allows him to describe himself as “but a nameless sort of person / (A broken Dandy lately on [his] travels)” (52), to make veiled references to his recent separation from his

² Catherine Addison, PhD, is an Associate Professor in the Department of English, University of Zululand, South Africa.
bluestocking wife (79) and to claim that his poetic art is far from accomplished, taking “for rhyme, to hook [his] rambling verse on / The first that Walker’s Lexicon unravels” (52). In his discourse on Venice, he eschews prophetic vision in favour of close observation of the present and material: the spectacle of the Carnival, Venetian women’s beauty and flirtatiousness, local painting, gondolas, the Ridotto. Though recognizing the City’s—and his own—fallen state, he is continually aware of pleasurable present compensations for grief and loss. As in Childe Harold, he positions Venice’s “glory” in the “days of yore” (10), describes Italy’s present as her “Eve” and sees the painter “Raphael” as being a tragic lover of her past beauty (46). But adverbs such as “still” and “yet” keep cropping up as he reminds himself—and us—of continuing wonders: “They’ve pretty faces still, those same Venetians” (11)”the land which still is Paradise” (46) and “While yet Canova can create below” (46). And although, as in the past, Italian women may nowadays still be “suspect in fame,” things have actually improved since Othello’s day, because

since those times was never known a
Husband whom mere suspicion could inflame
To suffocate a wife no more than twenty,
Because she had a “cavalier servente.” (42)

Of course, this is exactly the point of “Beppo”: just as an appreciation of what is left us in the mundane present can lead to a realization of the present’s decided advantages over the past, so commonsense and camaraderie are disclosed as preferable to tragic vendetta, even if less “poetic,” because they are life-affirming.

The virtuoso narrator of this trove of bathetic delights is not a transcendental subject but a specific personality speaking directly to a friend—probably of the same class and gender as himself (8)—back in England. Consequently, instead of starting his disquisition on gondolas in the self-observing posture of “I stood in Venice on the Bridge of Sighs,” he begins with a question, as if his discourse were in fact dialogue:

Didst ever see a Gondola? For fear
You should not, I’ll describe it you exactly:
’Tis a long cover’d boat that’s common here,
Carved at the prow, built lightly, but compactly,
Row’d by two rowers, each called “Gondolier,”
It glides along the water looking blackly.
Just like a coffin clapt in a canoe,
Where none can make out what you say or do. (20)

The “coffin” simile is one of the poem’s many memento mori, but its reminder is deliberately overwritten by the insinuations of the last line. And, for any reader too innocent or obtuse to get the point here, the narrator repeats it more explicitly in the closing couplet of the next stanza, still on the topic of gondolas:

And up and down the long canals they go,
And under the Rialto shoot along,
By night or day, all paces, swift or slow,
And round the theatres, a sable throng,
They wait in their dusk livery of woe,—
But not to them do woeful things belong,
For sometimes they contain a deal of fun,
Like mourning coaches when the funeral’s done. (21)
The contrast between these two poems’ *persona* is very dramatic, and it is highlighted not only by the fact that they deal at length with the same subject—Venice—but also by their proximity of composition. *Childe Harold* IV and “Beppo” were both written in Venice between 1817 and 1818. The story of how Byron was becoming weary of the whole poetic endeavour as he approached the end of *Childe Harold* in late 1817 and how his encounter with Frere’s *ottava rima* poem, *Whistlecraft*, re-envigorated his poetic creativity and led directly to “Beppo” is well known (*Letters and Journals* 5:264-268). What is less well-known is that it was not just authorial intention or poetic tradition that gave rise to the differences between the narrative identities in Byron’s two poems.

On the one hand, *authorial intention* is that problematic desire, projected on the raw material of his or her art by the creator, to make it say exactly what she or he has in mind to say. Of course Byron had—or developed in reading Frere—a desire to write a comic poem in a lower style than *Childe Harold*, whose composition had dragged on for years, outlining its original purposes. But authorial intention is tempered not only by the author’s own unconscious but also by the material with which she or he chooses to work. David Lodge remarks that most people find “vaguely shameful” the propensity of a particular verse form to make a poet “say something that he would not otherwise have thought of saying” (89). Authors do not like to confront the possibility that intention can be undermined, or at least modified, by the intrinsic nature of their linguistic and poetic material. Letting the form say its own, unexpected, things seems like a failure by the poet to master his or her art, but perhaps abandoning oneself to the curve and texture of the material and allowing it to “speak through” one is art itself?

*Poetic tradition*, or convention, on the other hand, is a habit of association, passed on from poet to poet, between a particular type of subject-matter and a particular stylistic feature such as verse form. Byron inherited a Spenserian stanza that had never been used for comic purposes and an *ottava rima* stanza that had been thus used many times before. But these habits of usage were, like many other poetic conventions, not entirely arbitrary. Spenserian stanzas lend themselves to an elevated and serious discourse: comedy in this medium is difficult to sustain. (Anthony Burgess is the only author whom I know to have tried this.) *Ottava rima*, while lending itself to the comic and romantic, may not be the perfect medium for epic. (Tasso was haunted for much of his life by the suspicion that his *Gerusalemme liberata* was not a true epic: he rewrote it once and at the end of his life composed his last epic—*Il Creato del mondo*—in the Italian version of blank verse.)

What I mainly want to demonstrate in the rest of this paper is the kind of contribution that the stanza form in each of these poems makes towards the identity of its speaker. In *Childe Harold*, for example, Byron had attempted at the beginning a different kind of narrator, with a more conventional, moralistic identity, which he clearly intended to be contrasted and opposed to the identity of the protagonist, a young but mournful ex-debauchee, resembling his young self in a number of ways. (This kind of dynamic opposition between narrator and protagonist Byron achieved successfully only later in *Don Juan*.) But the long stanzas, 92 syllables on average, encourage similarly long sentences and these, in Byron’s hands, whether they favour structures of hypotaxis or parataxis, inevitably thicken description into reflection and personal expression as they progress towards their climactic final line. The extremely integrated rhyme scheme also conspires to pull together the stanza’s discourse into a grand single utterance. Those dualities and ironies necessary for a dramatic disjunction between speaker and hero proved unsustainable once Byron got into his stride with the stanza. The narrator and hero in a sense became too similar. As speaker and protagonist collapsed together, both ending up in Matthew Arnold’s unkind phrase “trailing the spectacle of [their] bleeding heart[s] around Europe,” one of them, by Occam’s razor, had to go. Towards the end of *Childe Harold* IV, the narrator simply announces that Harold “is no more” (4.164) and the discourse flows on without him, the narrator transcendent.

Let us look again at the opening stanza of *Childe Harold* IV, quoted at the beginning of this paper. To fill in members of this audience unfamiliar with Edmund Spenser’s long
Narrator’s Identity and Stanza Form in the Venice Sections of Byron’s Childe Harold IV and “Beppo”

*Faerie Queene* stanza, I should tell you that it consists of eight lines of iambic pentameter, or five-beat verse, followed by one longer, six-beat hexameter line. The rhyme pattern is ABABCBCC, made up of two alternating sections ending with couplets—and both the couplets rhyme with one element of the alternating structure preceding it. In Spenser’s hands the alternating sections often narrate, while the couplets often comment, but without overt irony, since the two types of rhyme are so integrated into each other, allowing no sharp disjunction.

The Romantic poets who borrowed his stanza held much less reverence for poetic lines and tended to “enjam” them—in other words to force a reader not to pause at line ending by using strategies of syntactic incompleteness. Thus, despite line endings being marked by rhymes, they were often unnoticeable to a listener—though of course a reader would be able to see them on the page. Byron and Shelley in particular liked to pour their discourse into this stanza at a great rate of flow, stopping only at the end—or even beyond the end as in stanzas 8, 9 and 10 on your handouts. They seem to have delighted in the extra-long line 9 that gave to their great periods a resounding climax.

In Stanza 1, the first two lines are end-stopped, giving a reader a chance to “hear” the iambic pentameter and take note of the two end syllables, “Sighs” and “hand”. Line 4 is enjambled (run on), but the syntactically important verb “rise” does mark the first true rhyme quite noticeably. Then, line 4 is end-stopped—there is even a comma to help stem the flow of discourse—and “wand” offers a fairly if not wholly satisfactory completion for “hand.” But after this opening quatrains, the integrity of the lines becomes a much more subtle thing altogether. All the rest of the lines run on, to varying degrees, with the main syntactic pauses (after the first two words of line 6, for example) occurring in the middles of lines, not at the ends. The sentence builds up an urgency that requires a reader to increase her speed dramatically, so that the structure of the stanza becomes all but imperceptible until that resonant last line, pivoting on its middle so much more symmetrically than the five-beat structures preceding it, that completes and steadies the whole stanza.

This is typical of Byron’s tendency in the later cantos of *Childe Harold*. Though the stanzas—which are most often one sentence each—start relatively slowly, the speed builds up and by the second line of the first couplet they have taken off in this kind of wild flight whose great aim is not reached until the last syllable of that last, longer line. Stanza 4.15 is also a fine example, in which only lines 2 and 4 are end-stopped by any sensitive reader and the syntax totally fractured by line-endings from lines 5 to 9.

Within his structure it would be really difficult to be ironic or comic—especially towards the end of the stanza—because the climactic tendency does not encourage those little emphatic pauses and changes of tone that much poetic comedy requires. A reader finds herself caught up in a great visionary utterance that may require from her a dreamy or emphatic or even chant-like articulation. Always, as in reading Milton, she is reading with that forward-projecting expectation of the long, long sentence, building cumulatively rather than through discontinuity or disjunction towards its period.

With “Beppo,” matters are for the reader very different. *Ottava rima*, its stanza, belongs to an extremely ancient Italian tradition: it was invented some time in the Middle Ages by singers of early Romance languages, the *cantastorie*. From earliest times it was used for comedy as well as romance, and this is understandable, since it rhymes ABABABCC, having an alternating sestet followed by a couplet that is totally disjunct from the sestet (it shares no rhyme with it). Thus the first six lines are often used for narrative and the couplet for ironic comment. Many Italian writers had followed a tradition of using a syntactic break at the end of line 4, in addition to the one that the stanza itself asks for at the end of line 6; and so it had always been used for divided discourse, occurring in short contrasting bursts.

Thus, although the stanza of “Beppo” is only one line shorter than that of *Childe Harold*, it is a much more disjunct structure, allowing for briefer utterances more directly resembling the contingencies of speech and verbal thought. The undercutting of the developed section of the stanza by its shorter, pithier ending encourages humour, scepticism and dialogism. In
this poem’s narrator is found the first poetic representation of that “other” Byronic identity evident in so many of his letters: the tolerant, amused, cynical but good-tempered man of the world.

If we look again at the two stanzas on gondolas quoted earlier, we find all sorts of pauses at ends and middles of lines, many of them signalling changes in tone. Stanza 19 calls for perhaps five separate utterances, all slightly different in pitch and projected attitude. As in nearly all the stanzas, the last two lines make a unit, here a humorous and ironic comment. My favourite stanza of the whole poem, number 80 (the last on the handout) is typical. It opens with what sounds potentially like a Romantic invocation, “Oh, Mirth and innocence!” But this short unit is at once undercut by another, the scoffing echo, “Oh milk and water!”, which the reader must articulate in a different tone, suggesting its different narrative attitude. The next three-and-three-quarter lines offer a sad and worldly explanation for the rejection of “innocence”: “In these sad centuries of sin and slaughter, / Abominable Man no more allays / His thirst with such pure beverage.” And then there is yet another change of tone in the tolerant, accepting affirmation, “No matter, / I love you both, and both shall have my praise,” though of course the reader does by now see the narrator’s tongue in his cheek at the same time as she registers his compassion. Finally, the last two lines, folded neatly into that quotable little couplet unity, summarise and render ridiculous the stanza’s two opposing moods, using the obvious and yet conflicting rhyme between “candy” and “brandy” to cap the joke. “Candy” may be the chosen reward of “innocence” but the narrator, as a true denizen of a fallen world, patently prefers “brandy” to so sweet and juvenile a taste.

The ottava rima stanza throughout this poem encourages a change of tone and attitude in the last two lines because the rhyme pattern is so different from what went before in the sestet. And this one disjunction encourages others, allowing that Byronic “mobility” or constant change of temperament to find a poetic recreation, moving from serious to flippant, earnest to ironic, even within a single line. In “Beppo” Byron hardly ever uses long monologic verse paragraphs as he does in Childe Harold, and so the transcendental mode hardly appears at all. Later, in Don Juan, when he had learned to use more stops on his best poetic instrument, he found out how to do even the high style in ottava rima, but this is always different thing from the Spenserian high style, because the reader always knows in that in ottava one style or tone will not be sustained, and so she is ever on the alert for an undercutting or a sudden shift of mood and topic. The identity of the narrators of both poems are highly dependent on these intrinsic stanzaic features, which are much more dissimilar than a superficial inspection might suggest.

WORKS CITED


The Violated Woman as Emblem of the Nation in J. M. Coetzee’s Disgrace, Zoe Wicomb’s David’s Story, and Achmat Dangor’s Bitter Fruit³

Gillian Gane⁴ *ggane@pan.uzulu.ac.za*  
Department of English  
University of Zululand,  
South Africa

The recent work I’ve done on South African literature has focused on violations of women in post-apartheid novels. In my presentation here today I’m revisiting this work, hoping to open it up and get some feedback and guidance in developing my analyses. Two issues in particular loom large for me: One, in each of the three novels I work with, the violated women I focus on seem to demand to be seen as emblems of the violated land, though I’m profoundly ambivalent about this connection. Two: there is evidently a special connection between “coloured” South Africans and rape. An extreme version of this would hold that the coloured community was constituted by acts of interracial rape, that coloureds are the children of rape. Two of the novels I work with are by coloured authors and about coloured characters, and both attest to a special anxiety about the place of coloureds in the New South Africa. The third is by a white author. (Obviously this selection does not represent the South African population as a whole.)

I’ll discuss the three violated women I’ve chosen in turn.

The woman I focus on in Disgrace is the daughter of the white protagonist, David Lurie. Lucy is a lesbian who grows flowers and vegetables and boards dogs on a rural smallholding; a black man, Petrus, is her assistant and in the process of becoming a partner in the business. While her father, disgraced and dismissed from his job, is visiting Lucy on her farm, three black men break into the house and lock David up in the lavatory while they rape Lucy. Lucy will not speak to her father about the rape, and she refuses to report it to the police:

"... As far as I am concerned, what happened to me is a purely private matter. In another time, in another place it might be held to be a public matter. But in this place, at this time, it is not. It is my business, mine alone."
"This place being what?"
"This place being South Africa." (112)

Rape is in fact an act that ruptures the boundaries between the private and the public, that violates the privacy of a woman's most secret bodily parts and appropriates them for public use. In the hostile stranger rape to which Lucy was subjected, men broke forcibly first into the privacy of her home and then into the privacy of her body. Rape is always a political act, the exertion of male power over a female body; in a rape that crosses racial lines the issues are even more charged. When, as here, it is males of a disempowered race who rape a woman of the dominant race, the rape is likely to be read as a declaration of racial war. However, for whatever reasons—she does not explain—Lucy forestalls the further eruption of the rape into a widening public arena: it is, she insists, "a purely private matter." To her father, moreover, she maintains repeatedly that he cannot know what she has experienced. "You

³ This paper was presented at the 2nd Faculty of Arts Conference, University of Zululand, South Africa on the 18th June 2007.
⁴ Gillian Gane is a Visiting Lecturer in the Department of English, University of Zululand, South Africa.
don't know what happened," she tells him, "you don't begin to know" (134: emphasis in the original).

When Lucy does eventually break down in tears and talk to her father about the rape, while continuing to insist that he cannot "understand what happened to me that day" (157), she tells him that she thinks the rapists see themselves as "debt collectors, tax collectors," and she wonders whether she shouldn't see them in the same way: "what if that is the price one has to pay for staying on?" she asks (158). Horrified, David urges Lucy to leave the farm: "You wish to humble yourself before history," he writes in a note to her; "But the road you are following is the wrong one. It will strip you of all honour; you will not be able to live with yourself. . . ." (160). Lucy's anguish is apparent, and yet this does not make her want to flee danger; the honor that David stresses does not matter to her. And then it transpires that Lucy is pregnant as a result of the rape and will not think of having an abortion. Her black business partner and neighbor Petrus, who already has two wives (and who turns out to be related to one of Lucy's rapists), suggests that he marry her. Again, David is outraged and incredulous, while Lucy calmly points out the practical advantages of making a deal with Petrus. "How humiliating," David says. Lucy agrees that it is humiliating: "But perhaps that is a good point to start from again. Perhaps that is what I must learn to accept. To start at ground level. With nothing. Not with nothing but. With nothing. No cards, no weapons, no property, no rights, no dignity" (205)

Lucy's choices are deeply disturbing. We might approve of her stance as a white South African: humility, the recognition that there is a debt to pay, a willingness to start over with nothing—these would not come amiss for white South Africans. But to feminists her acceptance of rape and her choice to bear the child conceived as a result of rape are dangerous, not least in their implications for all women in a country where violence against women is epidemic. If someone must take on the sins of white South Africa, why should it be Lucy?

At the end of the novel, David Lurie appears to become reconciled to the future his daughter has chosen. He drives out to her farm one day, comes upon Lucy unobserved as she works in the flowerbeds, and experiences a moment of transcendence, an epiphany:

There is a moment of utter stillness which he would wish prolonged for ever: the gentle sun, the stillness of midafternoon, bees busy in a field of flowers; and at the centre of the picture a young woman, das ewig Weibliche, lightly pregnant, in a straw sunhat. A scene ready-made for a Sargent or a Bonnard. (218)

Flushed, Lucy looks moreover "the picture of health" (218), the pastiness and slackness David recently observed miraculously gone. The pregnant woman blending into a landscape of flowers and bees becomes an icon of beauty, fecundity, Goethe's eternal feminine—and a hopeful future for the land.

Dulcie Oliphant in David's Story is a far cry from the gentle flower farmer Lucy in Disgrace. She is "coloured"; she holds high rank in the liberation army, and we learn of her "supernatural powers," "her legendary strength, her agility, her incredible marksmanship, her invincibility" (180).

However, now that the struggle has been won and the new South Africa is about to be born, Dulcie is regularly subjected to torture. In the small hours of the morning men repeatedly enter her bedroom, having defeated "reinforced bolts and locks" and an alarm system (81). They wear black tracksuits and face-obscuring balaclava helmets (179). Their procedures are clinical: they carry a doctor's bag filled with instruments of torture (82). The "one who seems to be in charge" says on their first visit, "Not rape, that will teach her nothing, leave nothing; raped's too good for her kind" (178). Yet some of the torture is clearly sexual in nature: Dulcie's night clothes are removed as the session begins (178), and among the signs left on her body are scars on her buttocks (19) and "bleeding nipples" (115). Dulcie gathers from what her tormentors say that "she cannot be killed: that instead they rely upon her being driven to do it herself" (179).
Who are Dulcie’s tormentors? She sees hands that are both black and white: the figures in their black tracksuits are familiar, but imagining them as "friends, family, comrades. . . . brings a moment of pure terror, of looking into the abyss" (179). Dulcie is confronted with the devastating possibility that her tormentors are her former comrades in the struggle. In fact, it is strongly hinted that among her tormentors is the man she loves, David Dirkse, another coloured MK veteran, the man whose story constitutes the novel.

The understanding the narrator eventually reaches of Dulcie’s plight is presented in a story she tells David about.

. . . Bronwyn the Brown Witch who can do anything at all. Oh, there are tests galore for her, the usual ones of three wishes, three trips into the woods, three impossible tasks. She passes them all. She uses her magical powers to get her friends out of scrapes, to feed the poor, to stave off hurricanes and earthquakes, to drive back the enemy, until one day her friends, the sticks in the forest, come clattering together, lay themselves down on top of each other until they are a mighty woodpile. There is no way out. Bronwyn the Witch must die on the stake. (203)

Hearing this, David is visibly shaken. He concedes, "Yes, she's grown too big for her boots and they've had enough of her. She must give up her power, hand over her uniform, make way for the big men" (204).

There is no indication that Dulcie ever protests the torments she undergoes or even speaks of them, and her love for David does not change. Her sufferings are the product of a world where "The truth lies in black and white" (116), an extraordinary, ambiguous statement: the world is increasingly divided into two polarized racial groups, where truth oxymoronically lies. It is a world moreover where the military ethos of the struggle is now in tension with the ideals of a nascent democratic society, a world, finally, where women cannot become too powerful. Betrayal and conspiracy are in the air: the enemies that beset both David and Dulcie could be the forces of the apartheid regime—or, more chillingly, they could be their own comrades in the struggle. What cannot be fully confronted or openly said is the terrifying possibility that, first, Dulcie and David's former comrades in arms are now out to get them—the two of them linked because they are both coloured—and, second, that, perhaps in part as a consequence of his own victimization, David is involved in the torture of Dulcie.

We do however at the end of the novel see Dulcie once more, or a surreal vision of Dulcie. As the narrator tends the flowers in her walled winter garden, on the penultimate page of the novel, Dulcie appears:

Only when I turn to go back to work do I see her sturdy steatopygous form on the central patch of grass, where she has come to sunbathe in private. She is covered with goggas crawling and buzzing all over her syrup sweetness, exploring her orifices, plunging into her wounds: she makes no attempt to wipe the insects away, to shake them off. Instead, she seems grateful for the cover of creatures in the blinding light and under the scorching sun. (212)

As in the vision of Lucy at the end of Disgrace, Dulcie blends into a garden scene of flowers and sunlight. The scene of Lucy’s flowerbeds in their "season of blooming" included bees, emblems of fertility (216): this garden scene features undifferentiated "goggas" and, revealingly, they cluster not around the flowers but around Dulcie’s body, feasting on its "syrup sweetness." Her wounds are "orifices,” entrances into her body, like mouths or vaginas. Lucy is transfigured by her pregnancy: the gang rape about which she would not speak has borne fruit, and her violated body is now a sanctified vehicle in which the future takes shape. Dulcie is comparably transformed: the wounds that have penetrated the surface of her body, the violations that she suffered in silence, now yield sweetness: like Lucy’s, her body too is offered up as a sacrifice for the nourishment of others. In these final epiphanies, both women are elevated—or reduced, depending on one’s point of view—into emblems of the land, the wounded nation that yet endures and carries within it the seeds of the future.
I'm relieved to assure you that there's no comparable blending of South African earth and female flesh in the third novel I'll discuss, Achmat Dangor's *Bitter Fruit*. This novel starts in 1998 with the revived memory of the rape of Lydia Ali nearly twenty years before: when Lydia's husband Silas Ali sees the white security policeman who raped his wife, wounds reopen and history returns to haunt the present. Mikey, the couple's nineteen-year-old son, learns for the first time that he is the child of the white rapist—and the novel ends with him killing this man and planning to flee South Africa.

Lydia's family, the Oliphants, are coloured, their hybrid origins lost in history. Her husband Silas Ali is the son of a Muslim immigrant (actually, a fugitive) from India and a white woman who was the third of his three wives. Lydia's response to being reminded of the rape two decades ago is one that some would see as typically female: she hurts herself. Specifically, she dances barefoot on broken glass, severely injuring her feet, and needs to spend three weeks in hospital. The physical pain of her self-inflicted wounds, we are told, is "Lydia's way of displacing a much deeper, unfathomable agony" (21). And yet something changes in her. On the day that she's released from the hospital, she goes home by herself in a taxi, though Silas is breaking speed limits on the highway to come and pick her up: she's outdistancing her husband and declaring her independence from him. Later, she announces that she's taken a new job and bought her own car. In the few months in late 1998 covered by the novel Lydia has made the transition from being unable to walk to an impressive degree of mobility and autonomy.

Lydia's sexuality is central to her recovery process. Since the rape, half her lifetime ago, she has been sexually numb, but desire now reawakens in her. There's an intense incestuous scene between her and her son Mikey. If they had made love, she thinks afterwards, "there would have been terrible repercussions, unimaginable consequences—but there also would have been energy, even if it was a vile energy, filled with self-loathing and hatred" (167). Lydia goes on to imagine her desires more fully: "She wants now to be lowered into an abyss of the flesh, unquestioned and unquestioning, to descend as if she is drowning, she wants the death of her sexual being, and thinks it could only happen dramatically, sinful and sinned against . . . " (248).

Lydia's fantasies are fulfilled. At the party his friends organize to celebrate Silas's fiftieth birthday, she dances with a young man called Joao. "I want you," he says, and a short while later Lydia leads him to an empty room, where they make love on a billiard table. One assumes it is purely by accident, unconnected to Lydia's wish for the dramatic, that both her husband Silas and her son Mikey happen into the room and watch the scene. We see the lovers through their eyes: both of them stress above all the contrast between Lydia's olive skin and Joao's "black body," his "skin so black it was almost blue" (Silas, 267, 266). Silas silently reprimands himself for his "racist images" (266): "God, he had to stop going on about 'black this' and 'black that'. He was surprised by this preoccupation with race. Perhaps he had been denying it for too long: who we are is still determined by what color we are" (272).

That in the end is the message of the novel: race matters. To heal the wounds of her rape by a white man Lydia has sex with a black man, and to the extent that she is an emblem of the nation, she shows the way to the future.

When Silas goes home after the party, Lydia's car has gone and he knows that she's left him. And the novel ends with Lydia, on the road alone, heading for Cape Town in her new car, listening to a song about "last year's man."

If Lydia (like Lucie and Dulcie) is the nation violated by history, the conclusion of the novel is hopeful: she is restored and asserts her autonomy in making her way toward the future—not in a context of insects and earthiness, like Lucie and Dulcie, but in a motor car, an icon of modernity and mobility.

So of the three violated women, two become some sort of fertility goddesses, their suffering enabling them to nourish the future: Lucy will bear a coloured child, while ironically the other two novels strongly imply that coloureds in South Africa are doomed. The third woman, Lydia, is herself restored through the magical means of casual sex with a black
man. Meanwhile, however, the coloured men in the two novels by coloured authors are out of the picture—Wicomb’s David is dead, and Lydia’s husband and son in Dangor’s novel both plan to leave South Africa.

**Note:** Parts of this presentation are drawn from a published article of mine ("Unspeakable Injuries") and parts from a conference presentation ("Rape, Race, and Incest").

**Works Cited**


Towards Understanding the Aristotelian Virtue Ethics

Mojalefa Koenane\textsuperscript{5} (mkoenane@pan.uzulu.ac.za)
Department of Philosophy,
University of Zululand
South Africa

Abstract
In this paper, I depart from a point of view where I ask the question: Do we need ethics? And if so whose ethics or which ethics? Briefly the paper aims at arguing for a development of an ethical formation which is a for me a better ethical option when compared to other ethical theories such as, Steward Mill’s Utilitarianism, Emmanuel Kant’s Deontology or Duty ethics and any other ethical theory including theories promoting ethical relativism. The paper aims at promoting of public virtue and character, which embody rationality and principle values that can be universalized, all of which require a lot of wisdom and discernment. Furthermore, the paper aims at the development of the ethics of responsibility in the South African society: that is, building a public consciousness and character, which is also the same principles underlying the philosophy of ubuntu\textsuperscript{1}. Key concepts include: ethics, virtue; character, habit, the mean, deficiency, excess, moral degeneration, moral formation, phronesis (i.e. practical wisdom), deontology and utilitarianism.

Introduction
Virtue ethics is a tradition, which goes back to Plato and Aristotle. It is also referred to as aretaic ethics, from Greek word arête, which means excellence or virtue. Other moral theories try to work out what the right or good thing to do is. According to utilitarianism or consequentialism: the right thing to do is to balance the consequences of an act in terms of the pain it inflicts about or the pleasure it promotes. Put differently, consequentialism maintains that for an act to be morally good or ethical, a great number of people must benefit from it and the lesser number must suffer from it. This is the case of majority rule kind of ethics. From a utilitarian point of view, the fact that the consequences of an act will maximize well-being of a greater number of people, and then the act is morally acceptable (minimize pain and maximize pleasure). For a deontologist, the act is morally justifiable if it meets the following three criteria:

- It can be universalized: that is, act in such a way that by your own wills the maxim of your actions can be made into the universal rule. For example: if by your own will: you will that everybody (anywhere in the world) who finds a wallet which belongs to someone else they know should keep the wallet and use whatever is in it for themselves: then that will be fine. This is the Golden rule in practice.
- Rule-based ethics: this implies that according to Kant’s deontic ethics one does what one’s is bound to do, then everything else is fine. For example: it is everyone’s duty to tell the truth. One is in a situation whereby telling the truth will endanger the lives of other: a deontologist will only look at one’s obligation to tell the truth in order to arrive at the conclusion that your actions were ethically justifiable.
- Lastly, a deontologist will also look at the intention of the doer: if the intention was good then the act is morally defendable or justifiable. For example, a doctor who brings about the death of a mother of six, while his intention was to remove a cancer cell in the womb of this woman. Obviously, we would assume, that the intention was good, but the results were unforeseen and undesired therefore the doctor must be praised for his good intention.

\textsuperscript{5} Mojalefa Koenane is a Lecturer in the Department of Philosophy, University of Zululand, South Africa.
For virtue ethicists this is not the case; what matters most is not primarily the result of a specific act: it is not also what counts as man’s duties or how acts can be universalized or not. For virtue ethicists, what counts is the character of the doer. Virtue ethics is the view that the foundation of morality is development of good character traits. Put differently, according to virtue ethics, the heart of morality is not found in actions or duties but in the person or agent performing the action(s). The personal character of a person is what matters. Ethics has to do with moral questions and these could be summarized into two moral questions. That is: “How ought I to act?” And the question of character that is: “What kind of person ought I to be?” Our concern here is with the question of character.

In simple terms for Aristotle, virtue is the mean⁴ between two vices, excess and deficiency. Aristotle suggests that virtue involves finding the proper balance between two extremes. For example, excess is for Aristotle, having too little of something. For instance, a woman has just moved into the new house: she fears mice, and she soon realized that there is a mouse in her new home. She plants ratex, clue on the floor, she goes around looking for cats from her neighbours: she buys traps all for one reason she wants the mouse dead. Let us agree under normal circumstances that this is regarded as fear of mice, in its extreme, and thus excess for Aristotle. The fear of mice for this woman is exaggerated. I am, therefore, arguing that Aristotle is advocating harmony and balance not mediocrity. On the other hand, to fear not that which is feared by every human is regarded by Aristotle as deficiency. In this way a balance between cowardliness and foolhardiness is courage. Courage is, therefore, in Aristotle’s ethics a virtue or the mean between two extreme positions.

**Moral Formation**

For Aristotle, virtue is something that is practiced and thereby learnt: it is habit. This clearly implies that for moral education, Aristotle obviously believes that one can teach people to be virtuous. Imagine oneself in dire financial stress one needs money, when all of a sudden one sees a wallet. One picks it up because there is no one around, after picking it up one open the wallet, the first thing one sees is that it is full of money. Obviously, the owner of the wallet just lost it soon after he cashed out from the bank. What does one do: does one count one’s luck, empty the wallet and throw the empty wallet away? This is an ethical question, one may not be aware that it is but indeed it is an ethical issue.

Let me go further, imagine that as one opens the wallet and then one realizes a picture or something that will give one a hint as to who does the wallet belong. Remember that one needs some cash. Will one then give the wallet to its rightful owner or will one’s decision be motivated by one’s personal relationship with the rightful owner of the lost wallet? But also remember that one’s character and moral integrity is put on the test here. Remember our decisions are expressions of our character. For me, virtue is much more than traits of personality: it is a moral excellent quality of character.

Aristotle's philosophy about moral formation offers helpful insights. Following on the footsteps of Aristotle, a Dutch theologian Johannes van der Ven describes moral formation as the informal and formal education process that aims at developing people of character, who embody what Paul Ricoeur calls, ‘the good and the right and the wise.’

For Aristotle, virtue refers to a balance between two extremes or points of exaggerations namely Excess and Deficiency, which is arrived at through the wisdom of knowing what to do in a given situation.

Virtue is oriented toward one’s desires in one’s own situation within one’s own community, which indicates the ends being arrived for and the means to these ends. Virtue ethics is about personal dispositions and virtue ethics has to do with the person himself/herself.
In all ethical decisions, if one understands Aristotle correctly, then one requires the
criterion of wisdom, which Aristotle refers to as practical-ethical wisdom (phronesis). For St.
Thomas Aquinas this practical wisdom phronesis is referred to as the virtue of prudence:
which is defined as “true and reasoned state of capacity to act with regard to the things
which are good and bad for [hu]man[kind]”, Wallie (1965:6). Prudence in this context then
refers to a good sense in practical sense. This is the virtue which helps us to make the
decision whether or not return the wallet one found and knows who it belongs to or to keep it
and use the money and credit cards in it for oneself. Phronesis helps us to balance our
interests with the interests of others.

The concept of moral regeneration is increasingly used as an encouragement for
societal moral formation in South Africa. There is a reason for this: and the reason is
obvious, all other ethical theories used to rebuild morality among South Africans have
collapsed and never brought desired results: it is for this reason I suggest a return to the
Aristotelian-Thomist tradition of virtues. This supports MacIntyre’s (1981:1) position that
modern ethical theories lost sight of its roots. In his book ‘After Virtue’ he strongly
opinionates for the adoption of an aretaiic approaches to ethics. He thinks that morality has
suffered what he refers to as a catastrophe.

What Aristotle is suggesting in his account of virtue ethics is that by getting into a
habit of using our rationality (reason) and repeatedly doing what is virtuous, living a life of
virtue becomes second-nature. One can, therefore, without much effort get into the habit of
doing the right thing given his/her character or disposition.

Conclusion

Virtue ethics is about personal dispositions and thus has to do with the character of a person
or a person him/herself. Without dismissing other ethical theories as useless, I am taking a
position here and encouraging you the reader to do the same and that is to opt for the only
moral theory that proves to be based on rationality and thus bring about moral responsibility
(i.e. Koopman’s (2007:107), development of an ethics of responsibility) flowing from the moral
agent whose principles are based on human reasoning. Van der Ven (1998:344) came up with
the model of engaging deontological categorical imperative and virtue ethics, this in my
opinion is a good example of how these theories could work together. Van der Ven refers to
this model as the two complementary aspects of the same morality. Ethical decisions that
people must make are complex in their nature, but nonetheless, they must be taken.
Therefore in order to ensure that these decisions do not bring about regret they require a lot
of wisdom and discernment: that is where the character of the moral agent becomes
important. Character in all walks of life helps the moral agent to conquer even those
situations where making a decision can be a tormenting challenge of life.

It was suggested that theories of ethics could be divided into two: namely the
question of action and the question of character: or theories which provide rules for conduct
that is, utilitarianism and deontological theories and on the other hand virtue ethics, which
provides the wisdom necessary for applying rules in a particular instances. Strength of
character involves both feeling and action; virtue seeks the mean between two exaggerations
that is excess and deficiency relative to mankind. Virtue promotes human flourishing.

Deficiency, that is, cowardice is understood as the inability to do what is necessary to
have those things in life, which we need in order to flourish. Deficiency includes too much
fear or too little confidence. Excess on the other hand, is characterized by too little fear, and
too much confidence and poor judgement about ends worth achieving. The mean between
these two vices is courage. Courage involves willingness to take calculated risks.
References

Landscape and subversive subjectivity in Doris Lessing’s African Stories.

Pat Louw6 Ploux@pan.uzulu.ac.za
Department of English,
University of Zululand,
South Africa

Critical writing on *The Grass is Singing* has given attention to the way Doris Lessing portrays the African landscape. Eve Bertelsen highlights the way in which the forces of nature cause the gradual decline of Mary Turner. Bertelsen says:

What emerges is an idea of nature and consequently Africa, as quintessentially savage, a symbol of uncontrollable energy, a collection of dark, extreme forces that are constantly threatening to run out of control, to reassert themselves and claim some primitive ascendancy (1991:657).

Lessing herself has deliberately distanced herself from the attitude of Mary Turner towards nature. In an interview with Stephen Gray in 1983, Lessing describes the person on whom she modeled this character:

*The Grass is Singing* itself was based on somebody I knew, though, I suppose not an uncommon type. Don’t forget I was brought up on the veld, and then I came into Salisbury and met people who never put their noses out of town, unless they went on some picnic or other. One of the people I knew was a woman who used to go on a picnic and sit with her ankles together and her skirt down in case some beetle might crawl on her. She hated the veld with such a passion. And I thought, supposing this woman by some tragedy married a farmer...(2005:128).

Oliver Buckton maintains that Lessing is delivering an anti-pastoral critique in the novel. He argues that the novel offers a critique “not of African “nature” as such, but rather of the pastoral tradition that embodies an idealized and unrealistic response to landscape and rural life” (1999: 8). The farm is seen as a dystopia and a site of racism and sexism.

I would like to look at the way in which Lessing represents landscape in the *African Stories*. I hope show that Lessing conveys a much more complex variety of perspectives on landscape and the pastoral tradition in the stories than is reflected in the novel because of the scope and range of the short story genre. She goes beyond the limited perspective of Mary Turner in the novel to a more complex view of the space which is occupied by the human beings in a colonial context. However, because of the variety of narrative situations in the short story genre, I have found it necessary to confine my analysis to one aspect of subjectivity which is constructed in relation to landscape, that is, subversive subjectivity.

The relationship between landscape and the self is a reciprocal one. On the one hand, landscape is constructed by the act of investing the physical environment with meaning. Simon Schama maintains that “Landscape is the work of the mind” (1995:6). He says, “Its scenery is built up as much from strata of memory as from layers of rock” (1995:6). On the

---

6 Pat Louw is a Lecturer in the Department of English at the University of Zululand, South Africa.
other hand, landscape can be said to have an effect on the way in which identity is constructed. Lawrence Durrell, for instance, maintains that “human beings are expressions of their landscapes” (1960: 156). A later view is expressed by cultural geographer, James Tyner, who writes: “It is a matter of who we are through a concern of where we are” (2005: 261). Both Durrell and Tyner are raising the question of the connection between place and the human subject. Durrell was trying to isolate an essential quality in a culture whereas Tyner is using a post-colonial framework where essences are replaced by the concept of subjectivity. He sees landscape functioning as a medium through which subjectivity can be constituted.

In postcolonial terminology the subjectivity of the oppressed ‘other’ is constituted in terms of powerlessness with regard to the oppressor. In the story “No ‘Witchcraft for Sale” however, there is a significant shift in power relations due to the interaction between landscape and the main character, Gideon. He is archetypal faithful servant of Mrs Farquhar, a settler farmer’s wife: “a mission boy” (1994:36). The parameters of his existence seem to be bound by the domestic space of the kitchen and hence his identity is defined as the oppressed, powerless ‘other’. However, when a crisis happens in this household, it is redefined. A snake spits poison into the eyes of Mrs Farquhar’s little son, Teddy, and he is almost blinded. Gideon immediately runs into the veld, fetches a plant which acts as an antidote to the poison, and saves Teddy’s eyes. When Gideon administers the remedy, he becomes strong and powerful, dominating the situation in his gestures:

He stripped the leaves from the plant, leaving a small white fleshy root. Without even washing it, he put the root in his mouth, chewed it vigorously, then held the spittle there while he took the child forcibly from Mrs Farquhar. He gripped Teddy down between his knees, and pressed the balls of his thumbs into the swollen eyes so that the child screamed and Mrs Farquhar cried out in protest: ‘Gideon, Gideon!’ But Gideon took no notice. He knelt over the writhing child, pushing back the puffy lids till chinks of eyeball showed, and then he spat hard, again and again, into first one eye, and then the other (Lessing, 1994:38).

Gideon mirrors the action of the snake in spitting into the child’s eyes but this time bringing healing. He is empowered by the landscape, by the wild veld and the plants to slip out of the passivity implied in the colonized subjectivity to one involving agency. His power derives from bringing the wild into the domestic space. The concept of wildness is however constructed by the settler’s consciousness, not Gideon’s. For him, indigenous plants with their healing properties are well known to him, and the wild veld is his garden. The concept of ‘wildness’ is the way in which the colonial consciousness constructs the landscape.

Gideon’s subjectivity is thus redefined in terms of the outdoor space in which he is familiar and which holds for him layers of history: the wealth of tradition of the healers who had gone before him. Lessing alludes to this alternative narrative and history at the end of the story, where another employee of the Farquars says, “Ask your boy in the kitchen. Now, there’s a doctor for you. He’s the son of a famous medicine man who used to be in these parts, and there’s nothing he cannot cure’ (1994:42). In this way Lessing’s narrative produces a palimpsest effect where the previous narrative which occupied this space before is glimpsed at, but not elaborated, emphasizing the way in which the colonial space erases past histories. However this alternative identity of Gideon as traditional healer is not a naive, sentimentalized reformulation of a precolonial subjectivity. He is being seen against a colonized landscape and this is made clear in the last part of the story where a scientist comes to the farm to find the plant which healed Teddy’s eyes and the Farquars try to force Gideon to show it to them. At this stage Gideon seems to relapse into the old subjectivity demanded of the colonized other. He is under the control of his employers and is called upon
to obey them. Gideon engages in a power struggle with these people as it is suggested that it is against the African tradition to pass on the secrets of the healer to anyone, especially to strangers. However he manages to subvert the situation through his identification with the African bush. He appears to obey his employers but then takes them on a long walk in the blazing sun and then giving them a plant which is clearly not the right one.

He walked them through the bush along unknown paths for two hours, in that melting destroying heat, so that the sweat trickled coldly down them and their heads ached (Lessing, 1994:41).

Gideon uses his alliance with nature to punish his oppressors. The specific knowledge about the root is withheld from the whites and from western medicine in general as well as from the reader. This in itself is a reversal of power which is made possible by the landscape. Landscape acts as a site of subversive action for the oppressed ‘other’ in colonial society. Landscape performs a similar subversive role in “Traitors” where it redefines the subjectivity of the protagonists, two little girls who are called upon to co-operate with adults against their wishes. As with Gideon, they use landscape as obstruction to prevent or at least delay the adults from reaching the secret space where the little girls have been playing in the bush. Even though they are apparently obeying their parents’ request, they are in fact using the landscape against them.

Initially, the little girls transgress the space which is regarded in settler society as the male domain: the bush. The space which the mother represents is the house, surrounded by the garden. In an article on motherhood in Under My Skin, Victoria Rosner writes about the “border skirmishes fought by mother and daughter across the all-important boundary between house and bush (1999:12).

A similar border skirmish is played out in “Traitors” as the little girls venture out from the domain of the house and the yard to the unknown, wild area of the farm in spite of their mother’s disapproval. Lessing gives a sense of their complete immersion in this ‘alien’ or wild, unknown world by describing their perspective:

When we had tired of our familiar acre we explored the rest of the farm: but this particular stretch of bush was avoided. Sometimes we stood at its edge, and peered in at the tangled granite outcrops and great ant-heaps curtained with Christmas fern. Sometimes we pushed our way a few feet, till the grass closed behind us, leaving overhead a small space of blue. Then we lost our heads and ran back again. (Lessing, 1994:83)

Here we can see that the outdoor space is further divided between the “familiar acre” and the wild bush. The young girls occupy a “threshold space” as they stand on the edge of the familiar, looking on to the unknown, the wild. When they make the transition and move into that unknown space, they are completely cut off from the familiar, and the contraction of the sky to “a small space of blue” takes the reader down to grass roots level, to the perspective of a small child looking upward. This perspective is a reversal of the ‘imperialist gaze’. Instead of the male standing on a promontory, surveying the land he has acquired or through which he has come, this is a landscape in which the subject is immersed and enveloped. The positioning of the girls in relation to the landscape distances them from the role of the imperial. It complicates the traditional picture of settler society.

Against the landscape of the wild bush, the girls have agency. Their subjectivities are constructed in a way that gives them power and that is subversive to the dominant settler culture. However Lessing shows us that this subjectivity is always under threat as it is only for a brief period in a young person’s life it is possible to engage with the landscape by
exploring the natural environment. For a time they are free in their imaginary games and their exhilaration at being in the wild bush. But it is as if the shadow of adult life falls across them in the form of half-understood conversations about illicit liaisons and disgrace and the emotional pressure to be with the suffering women and to subscribe to their values and their fear of the bush. The women hold the view of 'savage nature' that Bertelsen describes, seeing it as hostile and threatening whereas the children see it as a site for adventure.

Pressure is brought to bear on them at the end of the story to return to the female domain of the house in solidarity with the female settlers who suffer from sexual oppression, especially when the men form illicit sexual relationships with black women. There seems to be a window period where children have the freedom to explore both the male and the female domains until they are finally locked into the role which society demands of them (McCormick, 1985: 13).

Lessing also shows us how the same landscape can generate different subjectivities. In “The De Wets come to Kloof Orange” (Lessing, 1992: 34), we are given two women, the English-speaking Mrs Gale and the Afrikaans-speaking Mrs De Wet, who are subject to the discourse of the patriarchal society but who are able to survive the oppression of male-dominated colonial society through their connection with landscape. Lessing constructs their subjectivities in relation to the landscape and in relation to each other. Both the women suffer from loneliness on the farm, but unlike Mary Turner, they look to the African landscape for comfort and even for survival. The older woman, Mrs Gale, creates a perfect formal English-style garden on their farm in Rhodesia. Here she is creating a landscape to act as a buffer zone between her and the alien wilderness of Africa. However her subjectivity is defined against one aspect of this wilderness: the mountain across the valley. She braves all kinds of weather to sit on her bench in the garden and look at this view:

Sitting here, buffeted by winds, scorched by the sun or shivering with cold, she could challenge anything. They were her mountains: they were what she was: they had made her, had crystallized her loneliness into a strength, had sustained her and fed her (Lessing, 1992:84).

In an odd mixture of imperial appropriation (they were her mountains) and subdued dependence, Mrs Gale depends on this landscape for her identity – for her very existence. At the same time she presents a rather pathetic figure, exposing herself stoically to all types of weather in order to commune with the view of the mountain (one cannot imagine a black woman doing this). The discourse of the sublime is suggested by the distance between her and the object of her attention and the awe with which she regards it. She is a spectator, not a participant in this landscape, just as at the opening of the narrative, she watches the sunset from her veranda “like a box in the theatre.” Mrs Gale’s positioning with regard to the landscape is a sad, pathetic copy of the strident imperial viewer of the conquered land.

In comparison, the younger woman’s subjectivity is constructed as a participant in the landscape. She is immersed in it in a similar way to the little girls in “Traitors.” She goes down to the swampy region of the river and dangles her legs in the water, fishes and watches the colourful birds. She is not put off by the steamy odours or threats of crocodiles or bilharzia as Mrs Gale is. I think Lessing is showing that she has a far more balanced and healthy attitude towards the landscape. Significantly, it is the Afrikaner who is more at home in the landscape. Her subjectivity is constructed in contrast to the quasi-imperialist subjectivity of Mrs Gale. The landscape functions for Mrs Gale as redemption, but not as power. She remains isolated both by her position in patriarchal society and especially in the farming community, but also by her class consciousness. This is expressed humorously in the
end when she says to her husband, “next time, get people of our kind. These are savages, the way they behave” (Lessing, 1992:93).

The position of the Afrikaner is interesting in this narrative because they are a group who is both colonizer and colonized. Being part of white settlement, they are party to the colonization of the African, but being Afrikaner, they were colonized by Britain. Lessing brings out this ambiguity by showing that the young Afrikaans woman is more at home in the natural landscape than the English woman, but that she is still unable to cross the racial barrier and make friends with black women and so is subject to the same loneliness as Mrs Gale is (or that Mrs Gale has learnt to overcome). The significance of this narrative lies in the way the landscape constructs two different identities which then come into conflict with one another, playing out in microcosm the on-going battle between the English and Afrikaans-speaking groups.

In each of these stories the African landscape is represented as an enabling and sustaining force rather than a hostile one. Lessing uses landscape to open a space of possibility and of freedom within the confines of colonial structures (and within the binaries of oppressed and oppressor). She takes various marginal figures in settler society and empowers them through landscape to become more than the role allotted to them by male-dominated colonial society. In these instances landscape functions as a transformative agent in the construction of a subversive identity within the colonial system.

References


Buckton, Oliver. 1999. ‘Race, Gender, and Anti-Pastoral Critique in Doris Lessing’s The Grass is Singing and Olive Schreiner’s The Story of an African Farm.’ Doris Lessing Newsletter 20(2), 8–12.


The Function of Sociocultural Characteristics in English Language Teaching In Esl Situations

By Musonda V Mpepo\textsuperscript{7} \textit{mpepo@pan.uzulu.ac.za}, University of Zululand
Department of English

Abstract

Many people would readily agree that a language needs to reflect the socio-cultural and linguistic imprints of the society in which it is used. However, when matters of English use in Africa are considered, little attention seems to be given to the possibility that there exists in communities outside England, and beyond native speaker enclaves, unique semantic systems (the social semiotics), which generate different rules of use. Thus, some teachers and language experts consider it appropriate to teach to appropriate to teach or recommend native ways of communicating notions and functions in non-native environments. Obviously, this viewpoint is limited in that it fails to recognize and acknowledge that people differ considerably in their communication preferences and habits. This paper presents some of the issues and challenges underlying the teaching and learning of English in some multilingual ESL situations of Southern Africa.

Introduction

Many people would readily agree that a language needs to reflect the socio-cultural and the linguistic imprints of the society in which it is used. However, when matters of English use in Africa are considered, little attention seems to be given to the possibility that there exists in communities outside England, and beyond native speaker enclaves, unique semantic systems (the social semiotics) which generate different rules of use. Thus, some teachers and language experts consider it appropriate to teach or recommend native ways of communicating notions and functions in non-native environments. Obviously, this viewpoint is limited in that it fails to recognize and acknowledge the fact that people differ considerably in their communication preferences and habits.

Variation in communication preferences and habits of people in turn suggests that an individual’s communicative skills can always be improved upon in the light of the demands of the speech community: no one (including a native speaker) ever knows a language completely. Therefore, the greatest challenge for educators and applied linguists is to carry out research into how non-native speakers of English do things with English words.

This paper sketches some of the issues and challenges underlying the teaching and learning of English in some multilingual ESL situations of Southern Africa. It begins by looking at the theoretical underpinnings of the communicative approach and points out how the African socio-cultural context has been ignored or given lip-service within the teaching practice.

Instead of recommending an eclectic approach, practitioners of the communicative approach, demonised those who practise other approaches or methodologies.

\textsuperscript{7} Musonda Mpepo, PhD, is an Associate Professor and Acting Head of the Department of English, University of Zululand, South Africa
The use of dated references is unavoidable because of the need to show the historical background of the communicative approach which some teachers use as a mark of being up-to-date or trendy if not as a panacea for language problems.

**Linguistic competence versus communicative competence**

One of the major concerns in the field of language teaching is how learners can be assisted to use the target language, as a central feature of their formal and social interaction, in order to achieve better education, and do things well which are important or essential to their everyday existence. Obviously, this concern demands the conceptualizing of the users' competence as a broad version of competence that encompasses more than the linguistic competence whose most influential exponent is Noam Chomsky (1957 and 1965). This broad version consists of three components, socio-linguistic, discourse and strategic competence.

Dell Hymes (1972) and many others use the term *Communicative Competence* to signal the fact that competent use of language involves elements of what Chomsky tried to exclude from the domains of grammatical theory. It is now accepted that language use varies according to context and that such variation is systematic and not random. Gumperz (1971), especially, has been interested in the ways in which an individual who speaks more than one language draws on his or her multiple linguistic repertoire, choosing to switch from one code to another to signal more or less subtle features of the communicative exchange.

Among the applied linguists who have a notable interest in a broad version of competence are Canale and Swain (1980), as well as Savignon (1985). According to Canale and Swain (1980:27-310) communicative competence consists, of grammatical competence, socio-linguistic competence, and communication strategies or strategic competence. The first of these competencies includes knowledge of words, and rules of their morphology, syntax, sentence grammar, semantics, and phonology. The second consists of two sets of rules, socio-cultural rules and rules of discourse.

Knowledge of both these rules is crucial to the interpretation of utterances for social meaning. Strategic competence consists of verbal and non-verbal strategies of communication that may be employed to compensate for communication breakdown arising from performance factors or to insufficient competence. The first kind would include the ability to paraphrase grammatical forms that a person has not mastered or cannot recall, momentarily, and the second would involve the various role-playing tactics, for example, how a speaker is to address a stranger whose social status is unknown to him or her.

With this background in mind let us turn to the socio-linguistic situation in most Southern African countries.

**English in the African Context and the Socio-cultural Reality**

One of the most important functions of English in Southern African countries, where it has been adopted is as a means of communication between speakers of different languages in education, work and social interaction. It is generally considered as a language not different
from any other local language, although it commands more prestige in formal and educational circles.

The other reason for teaching and learning it is to ensure effective communication with the outside world with native and non-native speakers from other socio-cultural and linguistic backgrounds. In this case, the question of intelligibility becomes pertinent.

Three factors have helped change the status of English in ESL situations. First, there has been a spread of mass media from first language-language speech communities (including popular fiction, cinema, radio, television, popular music, etc) which have presented forms of first language English language vernacular dialects. Second, the teaching of English has increasingly recognized oral communication as an aim. Third, English has come to be one of the main ‘lingua franca’ for communication among urban dwellers. All these developments have extended the functional range of English from a specialized and formal code to one with a much wider set of possible uses.

Evidence from other parts of the world indicates that when English is adopted as a second language for communication within a speech community, the configuration of features that would mark a style of speech as, say, formal in native-English are unmarked for this significance. Moody (1985: 142) presents the following:

Angogo and Hancock (1980) and Zuengler (1982) have made such observations about West Africa and Kenya respectively. Zuengler refers to the nativisation of speech functions and mentions forms that would in native varieties of English be “considered as strangely archaic or overtly formal” but are used in situations not perceived as such by Kenyan speakers (p.117). Richards (1982) designates this process in Singapore (and elsewhere) as indigenization and associates with the force of “cultural embedding” whereby a shift in cultural and social form: new features of style and registers hold for what he terms both “rhetorical” (H) and “communicative” (L) functions of English. Kachru (1966:265) has suggested that in Indian English the collocation characterizing styles of native English have different “contextual units”.

Such variation between stylistic systems of speech communities sharing the “same” language is commonly seen as having a sociocultural basis. Fishman (1977: 118) refers to the de-ethnicised nature of English in the modern world, and Hymes (1964) points out that the stylistic functions served by particular forms may vary from one community to another on the basis of each one’s entrophy of communication. Kandia (1981:65) argues that a speaker of a variety of English with such a different form-function fit is operating with a system that is, to a considerable degree, independent of the original model.”

However, more often than not, most teachers of English, because of their socio-cultural and educational backgrounds, not to mention their obsession for metropolitan English-speaking countries, in particular England and the USA, often ignore the fact that their task ought to involve giving attention to the ways particular societies and communities do things with the language.

In an exchange involving the native speaker, the one designated as an L2 speaker is often assumed to bear the burden of communication: he or she has to ensure effective and satisfactory communication. Mersham, and Skinner, (1999:74·75) have identified some of the
examples that may lead to communication breakdown or misunderstanding in African contexts between Africans and their European counterparts.

1. In Western culture it is reasonably common for a subordinate to greet a senior first. In traditional black culture, the subordinate may wait until he or she has been acknowledged by the senior person. A brief, single grip is the norm for the handshake in Western culture. In many black cultures, the handshake incorporates a triple-grip. In general, Black [sic] cultures may extend the period of hand contact beyond the first words of greeting and employ a less firm grip.

2. In Western culture eye contact is normal and important for effective communication. But Black [sic] culture has different norms: for example eye contact between junior to senior should be limited. Avoidance of eye contact is seen as a sign of respect.

3. In Black [sic] cultures, junior or inferiors may not respond vocally when summoned by a superior. Questioning of a superior is frowned upon. ... In Black [sic] culture, a low, soft voice is respectful but a loud voice is normal when communicating with friends. In White [sic] culture, too soft a voice is ‘annoying’, too loud a mark of disrespect. Extended polite exchanges and banter may be interpreted as wasting time.

4. Many Whites [sic] make a statement or ask a question, and confirm the statement or answer for the black recipient. For example, a White [sic] Manager might say to Black [sic] employee, ‘We have to deduct R30 for unemployment insurance, OK?’ The Black [sic] person, in an effort to be polite, may nod in the affirmative. Similarly, white people tend to add the phrase ‘do you understand’ to their statements. For example, ‘This will mean rationalisation will have to take place. Do you understand?’ The response may be yes but again politeness or the fear of appearing ignorant may mask a lack of understanding.

5. Often confusing to people is a person’s ‘yes’ or ‘no’ to a negative question, ‘Don’t you want to work overtime?’ might be answered by ‘Yes’, meaning I do not want to work overtime.

It is unfortunate, if these examples are understood as suggesting that it is the African speakers of English who should abandon their preferences and habits of communication and conform to the western ways of communication even in the ESL setting. In fact they are a clear demonstration that communication as a process is a burden that needs to be shared equally by all the participants.

It is worth noting that in most African countries even the best educated and economically powerful do not speak native-like English with one another (even when they have such forms in their repertoires). Contrary to what is commonly thought, native speaker or native-speaker-like competence, especially in pronunciation, may not necessarily ensure effective communication as it often attracts social ridicule.
At the level of pragmatics, communication between first language speakers and second language speakers may cause embarrassment and uneasiness between the participants. For example, it is unthinkable for children of second language speakers of English to address their parents or adults by the second person pronoun you. Also it is very embarrassing to hear first language speakers, even if they are family friends, address the parents of second language speakers by their first names. Similarly, first language parents often find it awkward to be addressed as Sir or Mr Robinson or Mrs Robinson. This is because they are used to being addressed by their first names by family friends.

In a survey of the use of English in a local town, the writer found that most of the educated speakers of English from Southern Africa, found it strange to be addresses as Sir or Madam as was the case from West African children.

The case of the West African children who attend model C school and address the adults who are friends of their family as Sir and Madam is interesting. Even if native-like competence is the goal of the school they attend, their parents insist that these terms of address be maintained because that is how communication in English operates between children and adults in Ghana.

**Implications for Communicative Competence and English Language Teaching**

Smith (1981:8) has argued that international English is “not owned by the native speaker” most of whom develop special skills in order to communicate internationally. Obviously, it is against this background that the Cox Report (1988) and Kingman Report (1988) both recommend that the integrity of a native speaker’s local dialect should be preserved, but also that he or she should also be able to communicate effectively with a wider speech community. By the same token, African speakers and learners of English in Africa, whether they are first language or second language speakers, should equally command both their local dialect(s) and the one that is closer to international English.

With regard to the recruitment of teachers of English, Quirk, (1989) warns that employment of language teachers who are ‘qualified through accident of birth’ has potentially adverse effects on language learners. A Director at one large EFL School in Europe, as quoted in Makoni, (1993:48) has observed the following about native speakers who get hired to teach English by virtue of their birth:

> In recent years we have become all too aware that, with the exception of those with degrees in modern languages, many English graduates – in contrast to their Irish, Scots, North American antipodeans and non-native English peers – are unaware of the elementary points of grammar and have been known to correct students’ perfectly accurate English to fit their own ungrammatical English.

Considering that Southern Africa as a region is characterised by diverse multilingual and multicultural situations, it is to be expected that inter-socio-cultural and inter-linguistic transactions are the norm rather than an exception. The question that has to be posed is in what language or varieties? Many countries in Sub-Sahara Africa have opted, for different reasons, to adopt English as the major language of education and officialdom.
The driving force has been the parents who send their children to school with an explicit message that a good knowledge of English is a passport to a good job and a better life. Many opponents of this development argue that Africa has been betrayed by her own sons and daughters who after independence still retain the language of former masters at the risk of marginalizing their mother tongues.

This is a very controversial matter, but one has to point out that opting to use English does not necessarily mean that one has abdicated from one’s mother tongue or individual identity nor is it a lost opportunity for sophisticated and effective expression of terms which the mother tongue offers.

There are two positions that have attracted support from teachers of language for many years. The view that a teacher of language is essentially a teacher of culture, and that a language is a carrier of culture does lead one to conclude that it is impossible to isolate a language from its culture. Obviously, there is a need to disentangle the two separate issues:

1. that a language is part of a people’s culture;
2. that a teacher of language cannot escape transmitting the socio-cultural load of a language.

The first assertion seems to be accepted among socio-linguists and some teachers but there is reservation about the import of the statement.

Wilma Rivers (1964) makes the point:

If we teach language without teaching at the same time the culture in which it operates, we are teaching meaningless symbols to which the student attaches the wrong meaning.

This may be a valid point where it relates to the foreign language teaching. It may not necessarily hold strongly in a situation where the target language is a second language and a lingua franca.

The other view held is that a language can be taught and learnt as a social tool reflecting not the culture of its originators but that of the user even in transplanted environments. This view has led to learning material being prepared and developed to reflect the socio-cultural and linguistic realities of the learners of the English language in many parts of Africa. Many African writers, for example, Chinua Achebe (1975) have used the foreign language English to mirror and give expression to their culture and traditional societies. Indeed, English has become the possession of the many people who use it as a lingua franca. It needs to carry the culture of the people who have adopted it and when it is taught it would be absurd to expect it to carry a foreign culture. The question to be asked is ‘for what purposes is English used in Southern African contexts, and what degree of competence is the desired goal?’

Too often an impression is created that there is a general type of English which can be learnt. The justifications for this view would seem to be found in the pervasiveness of the written word. True enough, the rules of the written word are less flexible than those which govern the spoken word and there is greater an approximation to a common syntactical
standard in written English than there is in spoken English. This point is valid for both English as an *intra-language* or *inter-language* means of communication.

Therefore, inter-group contact and communication through different varieties ought to be encouraged. The different socio-cultural and linguistic features that cut across different groupings and their corresponding connotations need to be understood and used in different situations. The argument then is for an individual’s democratic knowledge and use of features drawn from a broad linguistic and socio-culture repertoire. The imposition of a particular variety as the only standard is restrictive in the sense that it limits knowledge and communication to a narrow single variety. Halliday (1978) has pointed out that communication by multilingual is complex because of its diverse meaning potential.

Obviously, this is not to suggest that an individual’s knowledge and use of English from their respective backgrounds excludes them from learning and using the standard variety. The point is that, this form of English has been established and adopted for use in education and different worlds of officialdom. However, it has to be stressed that, in social contexts, the use of the strictly standard form often has condescending overtones and discriminatory connotations.

**Conclusion**

From what has been discussed so far, it is clear that a language or language use has to reflect the socio-cultural imprints of the society in which it is used. One of the direct implications is that a speaker-hearer is expected to use the language like the people with whom he or she regularly associates. However, at the same time, one may also choose in appropriate circumstances to allow one’s speech or usage to move in the direction of another socio-cultural and even linguistic group. Good teaching should produce learners who are more aware of the different varieties of English in their country and of which variety to use in particular situations.

Knowledge of a language, according to Cook and Seedhoefer, (1995:4) (eds.) is:

- a social fact, the expression of individual identity, the outcome of dialogic interaction,
- social semiotic, the intentions of speakers.

Obviously, interlanguage as a target for second language is a wrong assumption. The communication skills of an individual can always be improved upon in the light of the demands of the speech community: no one (including the native speaker) ever knows a language ‘completely.’ This is not an empty ideological generalisation but it is one that has practical, social and political consequences. There is a need to question the advisability of using or recommending native ways of communicating notions and functions.

There is also a need to investigate formal and pragmatic contrasts because learners and users of English in diverse multilingual and multicultural contexts need to be aware of the form-function fit: the relationship that holds across the spectrum of varieties and purposes of language use and those who do not. This includes even native speakers. Even if in some sense they ‘already know’ how to communicate with each other socially in English, their
communication knowledge and skills, their language needs to be perfected and developed bearing in mind other rules that are generated by other systems.

References


A Bibliometric analysis of publication and research collaboration patterns amongst authors in the natural sciences

Daisy Jacobs 8: djacobs@pan.zulu.ac.za

Department of Library and Information Science, University of Zululand, South Africa

Abstract

This study presents the mainstream scientific output of five of the most productive South African institutions over a 10 year period between 1995 and 2004. The paper discusses the distribution of publications by institutions, index of specialization, collaboration and patterns of co-authorship. The results show that South African authors collaborated more frequently with international authors (73.99%) than with national authors (26.01%). This was confirmed statistically at a confidence level of p-value <0.025. A further non-parametric chi-square statistical analysis illustrated that there are significant differences in the proportion of co-authorship amongst the five institutions (p-value<0.005).

1. Introduction

A primary feature of modern science is that researchers collaborate in teams. Research teams appeared sporadically already during the 19th century (Havemann, 2001), and are now so common that on various occasions scholars in science studies have stipulated using teams as basic units of investigation as opposed to individual researchers. Very often, in many fields, researchers without teams cannot keep up with developments on the research front.

Since the beginning of modernity, science has been in a state of permanent change. According to Haiyan, Hildrun and Zeyuan (2004), there have been varying manifestations of collaborative work. And since the pioneering work of Price (1963), and Beaver and Rosen (1978, 1979, 1979), a large number of scholars have stressed different forms and roles of scientific collaboration in different scientific fields. An investigation into these researchers can be made by analysis at micro level (individuals), meso level (institutions), or macro level (countries) (Ganzel 2002, Kretschmer 2004).

The last few decades have witnessed a restructuring in scientific research. Increasingly, it is becoming a collaborative endeavour (Subramanyam 1983). According to Qiu (1992), there is also a strong trend towards borrowing from, and interpenetration across disciplines. As a result of these trends, there is a rise in collaboration both within interdisciplinary research and an increasing interest in collaboration amongst both researchers and science policy makers. The global tendency towards more collaboration in scientific research – often crossing the borders of institutes and countries – has been demonstrated in many scientific

8 Daisy Jacobs, PhD, is a Senior Lecturer in the Department of Library and Information Science, University of Zululand, South Africa.
fields (Havemann, 2002). For researchers to work together in order to solve problems is so common now in many branches of science and technology, that in many cases it makes more sense to consider groups as the basic units of research rather than individual scientists (Seglen and Aksnes, 2000). To establish and maintain collaborative links can be more or less easy – depending on the scientific, cultural, political, and geographical barriers that must be overcome. Havemann (2001) is of the opinion that in recent years, some of these barriers have been lowered, especially in transnational collaboration.

How research collaboration and productivity are correlated has been studied by many scholars. A recent study by Seglen and Aksnes (2000) delves in to scientific productivity and group size and the result of the study carried out by Gupta and Karisiddapa (1998) shows that there has been a systematic increase over time in the number of papers per author in the subset of collaborative researchers.

International scientific collaboration has generated increased interest in recent years due to the higher quality of collaborative papers as shown by higher average impacts compared to solely national publications (Van Raan, 1998) and the benefit gained by peripheral countries from international collaboration which integrates their national publications in the international scientific network (Russell, 1995).

1.2. Objectives

The purpose of this paper was to explore mainstream scientific output in a way that can illustrate the extend of scientific development in South Africa. Specific objectives of the paper include:

- To identify the main South African productive institutions during the period of 1995-2004
- To identify the institutions that are actively involved in the production of the main disciplinary fields
- To investigate the growth and development of South African scientific publications, 1995-2004
- To evaluate the percentage of international collaborations amongst South African scientists

1.3. Methodology

The analysis presented in this paper has been accessed from Scientific articles published in journals processed the online, CD-ROM and in Web versions of the Science Citation Index (SCI) which is published by the Institute of Scientific Information (ISI). All papers were recorded in the annual volumes of the Science Citation Index (SCI) of the Institute for Scientific Information (ISI) for the period of 1995-2004. The data for each document included author names, title, abstract, date, document type, and cited references. Author names were standardised as some authors may report their names differently in different papers. Each author was identified by his/her surname and first initial only (Newman, 2001).

The following five most productive South African institutions were studied. They were the Universities of Pretoria (UP), Cape Town (UCT), Natal (NATAL), Stellenbosch (STELL) and Witwatersrand (WITS). The 7 main disciplinary fields were identified as Clinical Medicine (CLIN), Plant & Animal Science (PLT&ANM), Biology & Biochemistry (BIO&BICH),
Engineering (ENGN), Environment & Ecology (ENV&ECO), Chemistry (CHEM) and Physics (PHY).

The performance of the five institutions was judged and compared on the basis of the following qualitative and quantitative indicators, (a) size of scientific activity measured by volume of production during the period of study (b) each institution’s fields of specializations using the specialization index (SI) formula (c) publication activity (d) and the collaboration of scientific activity measured by co-authorship. Once retrieved, records were analyzed using Microsoft Excel in order to identify the production distribution throughout the period of study, distribution of publications by fields and institutions, and distribution by type of document, in order to determine whether one institution is more or less specialized (i.e. active) in a specific field in comparison to other institutions, the specialization index (SI) formula was used (Godin, Robitaille, & Côté, 2001) It was calculated as the share (%) of publications of institution X in field Y divided by the share (%) of publications of all the institutions in field Y.

The study was also analytical in nature, with the application of suitable statistical tools to in strengthen the empirical validity. The computer software, SPSS was used for processing. A non-parametric chi-square test was applied in the analysis of the differences of co-authorship amongst institutions, and a t-test was used to the rate of co-authorship rate. A further ANOVA analysis was conducted to reveal whether or not significant inter-institutional variation in their total publication output is in the mainstream.

1.5. Findings and discussions

1.5.1 The disciplinary distribution of South African publications

Using the information available in the address field of the articles, the number of articles produced from the most productive South African institutions was calculated. In this study, only articles from the 10-year period of 1995-2004 were included. 19399 articles were identified in total from 7 fields of study amongst the 5 institutions. An analysis of the total output presented in Table 1 indicates that the University of Cape Town (UCT) accounts for the largest share of South African publications (26.80%) followed by UP (19.84%). The University of WITS and STELL are in the range of 18.19%. The University of Natal with a share of 16.28% accounts for the least of all the other institutions. A further statistical analysis was been employed to indicate if there was a significant level of inter-institutional differences identified in the total output publications. However, the result of a statistical analysis at p-value >0.10 does not reveal significant inter-institutional variation in their total publication output.
A Bibliometric analysis of publication and research collaboration patterns amongst authors in the natural sciences

<table>
<thead>
<tr>
<th>Institution</th>
<th>CLINIC</th>
<th>PLT&amp;ANM</th>
<th>BIO&amp;BICH</th>
<th>ENGIN</th>
<th>ENV&amp;E CO</th>
<th>CHEM</th>
<th>PHY</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP</td>
<td>560(14.55)</td>
<td>1436(37.31)</td>
<td>101(2.62)</td>
<td>441(11.4)</td>
<td>377(9.80)</td>
<td>332(8.63)</td>
<td>602(15.64)</td>
<td>3849(19.84)</td>
</tr>
<tr>
<td>UCT</td>
<td>1732(33.3)</td>
<td>873(16.79)</td>
<td>431(8.30)</td>
<td>671(12.9)</td>
<td>541(10.4)</td>
<td>411(7.91)</td>
<td>539(10.37)</td>
<td>5198(26.80)</td>
</tr>
<tr>
<td>NATAL</td>
<td>947(29.98)</td>
<td>714(22.60)</td>
<td>84(2.66)</td>
<td>319(10.1)</td>
<td>275(8.70)</td>
<td>324(10.2)</td>
<td>496(15.70)</td>
<td>3159(16.28)</td>
</tr>
<tr>
<td>STELL</td>
<td>970(26.51)</td>
<td>642(17.55)</td>
<td>161(4.40)</td>
<td>751(20.5)</td>
<td>321(8.77)</td>
<td>309(8.44)</td>
<td>505(13.80)</td>
<td>3659(18.86)</td>
</tr>
<tr>
<td>WITS</td>
<td>1516(42.90)</td>
<td>379(10.72)</td>
<td>158(4.50)</td>
<td>338(9.56)</td>
<td>232(6.56)</td>
<td>360(10.1)</td>
<td>551(15.60)</td>
<td>3534(18.22)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>5725(29.51)</td>
<td>4044(20.85)</td>
<td>935(4.82)</td>
<td>2520(13.0)</td>
<td>1746(9.0)</td>
<td>1736(8.9)</td>
<td>2693(13.88)</td>
<td>19399(100)</td>
</tr>
</tbody>
</table>

Source: compiled by science citation index

*P-value >0.10

**P-value <0.005

Table 1. Distribution of publications according to subject field and institutions, 1995-2004

In terms of disciplinary scientific publications throughout the period studied (1995-2004), the vast majority of South African publications came from the field of Clinical Medicine (29.51%). PLT&ANM science, PHY and ENGIN followed with 20.85%, 13.88% and 13.00% respectively of the departments’ output for the period. The other disciplinary fields, in order of percentage contribution, were ENV&E CO (9.00%), CHEM (8.94%), and BIO&BICH (4.82%). With the exception of UP (14.55%), all the institutions made their highest contribution in clinical medicine. However, notable differences were found with respect to the contribution made by individual institutions to different fields of study. The University of Pretoria, for example, contributed heavily to PLT&ANM science (37.31%) and PHY (15.64%) and, the least to BIO&BICH with only 2.62% out of the total production. The University of WITS, on the other hand, has got the highest publication share in clinical medicine (42.90%) and the lowest in BIO&BICH (4.50%). The University of Cape Town and Natal were strong in the fields of Clinical medicine and PLT&ANM science while the University of Stellenbosch showed its highest production in the fields of Clinical medicine (26.51%) and Engineering (20.52%).

In general, coverage varies across different fields. The highest coverage was obtained by Clinical medicine and, PLT&ANM science. In Engineering and Physics, the coverage was
somewhat lower. In the CHEM and ENV&ECO the coverage tended to be poorer. The least contribution was from BIO&BICH. These disciplinary differences have been proven using the appropriate statistical analysis and it was found that scientific publication differences amongst the seven fields of study were justified at a confidence level of \( p < 0.005 \).

### 1.5.2 South Africa’s most productive institutional activity

The graphing of article counts annually is a bibliometric technique that determines how many articles have been devoted to a given concept over time. The rationale for this method is that bibliographic records are a relatively objective indicator for measuring discourse popularity (Ponzi & Michael 2003). Once information is published in the form of articles, annual counts can be captured to provide time-series data that can be charted and analysed. Based on the work of Abrahamson (1991, 1996) and Abrahamson & Fairchild (1999), the bibliometric technique of article counting is a reliable analytical approach to begin an analysis of published literature in order to illuminate and trace the development of a concept.

The percentage increases or decreases were calculated using 1995 as a base year. The over all trends since 1995-2003 for all institutions with the exception of WITS and UCT showed drastic percentage decrease from 1995 to 1996. Viewing the trend for each institution, however, reveals important differences between them. The article production of the Universities of Natal, UP and STELL showed highest percentage increase in 2003 from 1995, with 84.10%, 108.10% and 105.10% respectively. However, their percentage increase declined in 2004 to 5.60%, 9.83% and 76.19% respectively. The annual volume of UCT’s scientific publications declined significantly in 1996 by 57.0% from 1995, and increased in 1997 to 81.80%, after which it declined in 1998 to 59.20% (Figure 1). After this year, however, the trend reversed. The number of publications was increased at a steady rate until 2001 after which the rate of decrease continued until 2004, although not very substantially.

![Figure 1](image-url)  
**Figure 1.** South Africa’s institutional publication activity (Data Source: SCI)
The University of WITS showed a fairly steady increase in the number of scientific publications from 1996 to 2000, followed by relative stability until 2002. A decline began in 2003 (16.0%) but it was less rapid than that of 1996 (44.1%). In 2004, all the institutions’ recorded output was lower than in 2003. The data available for 2004 is not necessarily complete, so it would be risky to state that the downward trend continued in that year as well. In general, the analysis of the institutional classification by year showed that there were two peaks in the distribution of research output first between 1999 and 2000 and the second between 2002 and 2003.

1.5.3 Index of specialization

The absolute output of publication doesn’t consider the size of the institution and discipline. The specialization index, therefore, makes it possible to determine whether an institution is more or less specialized in a specific field when compared to other institutions. A specialization index of an institution that is less than 1 means that the institution is not specialized in this field. In other words, it is less active in this field than the average of institution. If the index is higher than 1, it would mean that the institution is more active in a given field than the average institution in the same field (Godin, Robitaille, & Côté, 2001).

![Figure 2. Index of Specialization (IS) for most productive institutions, 1995-2004](image)

The specialization index, Figure 2, has been calculated for selected fields using publication data for the period 1995-2004. When interpreting the indicators one should consider that the specialization of the different fields varies considerably. Generally, UP has a high relative publication activity in the PLT & ANM science (SI=1.80) and Physics (SI=1.13). UCT, on the other hand, specializes in Clinical Medicine (SI=1.13), Bio&Biochem (SI=1.72) and ENV&ECO (SI=1.16). The Universities of Natal and WITS have specialized in three disciplines Clinical Medicine, Chemistry and Physics. The analysis, moreover, shows that the field of Engineering is only specialized in STELL (SI=1.58). Similarly, UCT is the only institution that has specialized in Bio & Biochem (1.72).
1.5.4 Scientific collaboration

The globalization of science has resulted, among other things, in a generalized increase in international scientific collaboration, thus making necessary updated information on scientific co-operation, co-authorship, and influence. This is important not only for scientifically advanced countries but, perhaps, even more so for the developing world whose contribution to scientific achievement and its legacy does not receive the same level of attention and reflection (Bertheleumot, Russell, Arvanitis, Waast & Gaillard, 2001). There has been a significant increase in the number of internationally co-authored papers in many countries as well as in South Africa.

An analysis of the data of collaborations, Figure 3, shows that the share of national co-authorship is about 26.01%, which is smaller than international collaborations (73.99%). In terms of international collaboration, South African authors’ affiliation with the USA and UK ranked first and second, with 45% and 13% respectively, in the period of 1994-2003. Other countries in order of ranking, were: France (8.05%), Germany (7.80%), Netherlands (7.60%), Australia (3.40%) and Belgium (3.20%). However, the affiliation with other countries was very minute: such as Sweden (2.90%), Japan (2.70%), Canada (2.50%) and with all the African countries as a whole (3.20%).

A further analysis of institutional collaboration patterns showed that all institutional researchers, except UP scientists, collaborate comprehensively with international authors. The share of international collaboration by percentage amongst institutions was as follows: STELL (91.25%), UCT (83.33%), WITS (78.22%) and Natal (68.84%), while the corresponding share in UP was 44.87%.

![Figure 3 Scientific collaboration patterns in South Africa](image)

A t-test was used to determine if there was a statistical significant difference between the means of national and international collaborations. The resulting p-value of 0.0185
(P-value <0.025) indicates that South Africa authors collaborate more frequently with international scientists than they do with for national.

The rate of international collaborations amongst institutions, Figure 3, illustrates that the Universities of STELL (10.4), UCT (5.0) and WTS (3.5) came first, second and third respectively. This means that the authors from these institutions collaborate more internationally than nationally. On the other hand, the fact that the University of Pretoria achieved the lowest rate implies that the pattern of collaboration between national and international authors is somewhat the same. A further non-parametric chi-square statistical analysis was conducted to determine if there are significant differences in the proportion of co-authorship amongst the 5 institutions. The result (p-value<0.005), shows that there are significant differences in the rate of collaborations amongst the institutions.

1.6. Conclusion

The results of our study showed that there were a total of 19399 articles from 7 fields of study amongst the five institutions during 1995-2004. Of these, the University of Cape Town (UCT) accounted for the largest share of South African publications (26.80%) followed by UP (19.84%). The University of WITS and STELL had a publication share in the range of 18-19%. The University of Natal, with 16.28% share accounts for the least number of publications. While the growth of publications in each institution reveals important differences, a gradual increase in total article production was apparent.

Most South African scientific publications came from the field of Clinical Medicine (29.51%). PLT&ANM science, PHY and ENGIN followed with 20.85%, 13.88% and 13.00% respectively. The other disciplinary fields, in order of percentage contribution, were ENV&ECO (9.00%), CHEM (8.94%), and BIO&BICH (4.82%). Field of specialization varies greatly among institutions. UP, UCT and Natal have a higher relative publication activity in Plant & Animal science (SI=1.80), BIO&BICH (SI=1.72) and CHEM (SI=1.15) respectively. Whereas, STELL and WITS are more active in ENGIN (IS=1.58) and CLNIC (IS=1.50) respectively.

South African authors collaborated more frequently with international (73.99%) than with national (26.01%) authors even though the rate of institutional affiliation varies considerably. The international collaborations were highest with the USA (45%) and the UK (13%) and with other countries in the order of France (8.05%), Germany (7.80%), Netherlands (7.60%), Australia (3.40%) and Belgium (3.20%).

In comparing the international collaboration of other African countries with developed countries, a research done by Berthelemot, N et.al., was found that the international collaboration was overriding in Biomedical Research, Biology, Earth and Space Science, and Physics. Institutions in the US were the principal collaborators followed closely by those in France. It should be noted that international collaboration is important in any research area, but the national collaboration between individual scientists as well as between institutions are vital for the development of science and scientific research within the country.

It follows naturally that further study should examine a different discipline, preferably social science, to determine whether there are differences between disciplines, and the patterns of those differences if any.
References


Havemann, F. Collaboration behaviour of Berlin Life Science researchers in the last two decades of the twentieth century as reflected in the Science Citation Index. *Scientometrics* 52 (3) 435-443, 2001.


Auditing the Indigenous Knowledge Systems (IKS) in South Africa: Challenges and Opportunities

Dorothy Njiraine\(^9\) (dnjiraine@yahoo.co.uk),
Dennis N. Ocholla\(^{10}\) (docholla@pan.uzulu.ac.za)
& Jerry Leroux\(^{11}\) (Jleroux@pan.uzulu.ac.za)
Department of Library and Information Science
University of Zululand
South Africa

Abstract

This paper discusses the auditing of IKS in South Africa, and explores IKS policies and legislations, structures, centres and systems, activities, and research trends. The study targeted the Ministries of Science and Technology and Arts and Culture; NGOs; and Research Centres/ Higher Educational Institutions (HEIs), also included, were individuals and documented reports from various institutions. We have applied largely qualitative (i.e. purposive and snowball) sampling techniques for data collection through document analysis and limited interviews. Snowball sampling was used in order to link with the key subjects of the study through direct or indirect linkages for face-to-face interviews. A review of relevant literature, particularly government documents, was very useful. Preliminary results show that an IKS policy exists and most institutions base their internal policies/guidelines on the said policy. There is still as lack of co-ordination amongst the various stakeholders of IKS. There are various databases representing local research activities in the country, but efforts should be made to co-ordinate all the research conducted in the country.

1. Introduction

Indigenous knowledge can be defined in a number of ways. Semali and Kincheloe (1999: 3) claim that Indigenous Knowledge aims to “reflect the dynamic way in which the residents of an area have come to understand themselves in relation to their environment and how they organize that folk knowledge of flora and fauna, cultural beliefs, and history to enhance their lives”. The National Research Foundation defines it as a “complex set of knowledge and technologies existing and developed around specific conditions of populations and communities indigenous to a particular geographic area” (NRF, nd: np). The World Bank (1998: 1) states that “IK is unique to a particular culture and society. It is the basis for local decision-making in agriculture, health, natural resource management and other activities. IK is embedded in community practices, institutions, relationships and rituals. It is essentially tacit knowledge that is not easily codifiable”. Kaniki and Mphahlele (2002: 3) define Indigenous knowledge as a cumulative body of knowledge generated and evolved over time, representing generations of creative thought and actions within individual societies in an ecosystem of continuous residence, in an effort to cope with an ever-changing agro-ecological and socio-economic environment.

In addition to the above definitions, Indigenous Knowledge is also referred to as local knowledge (Anand, 2006: Kargbo, 2005: 200), traditional knowledge (IDRC, 1992: Ellen and Harris, 1996: 3), indigenous and traditional knowledge, (Kawooya, 2006),

\(^9\) Dorothy Njiraine is a Librarian at the University of Nairobi Library, Kenya, as well as a PhD student in the Department of Library and Information Science, University of Zululand, South Africa
\(^{10}\) Dennis N. Ocholla, PhD, is Professor and Head of the Department of Library and Information Science University of Zululand as well as Editor – in- Chief, South African Journal of Libraries and Information Science, South Africa
\(^{11}\) Jerry Le Roux, PhD, is Associate Professor in the Department of Library and Information Science, University of Zululand, South Africa.
Auditing the Indigenous Knowledge Systems (IKS) in South Africa: Challenges and Opportunities

ethno-ecology, folk knowledge, folklore, ecology, and knowledge of the land (Kargbo, 2005: 200). This paper applies both IK and IKS to mean the same, adopting Chisenga’s (nd: 94) application of the two terms interchangeably.

IK cannot be defined on its own because it is embedded in the culture of the people. As Ngulube (2002:62) points out, IK pertains to experiential locality-specific knowledge and practices of medicine, healing, hunting, fishing, gathering, agriculture, combat, education, and environmental conservation. Mutula (nd: 129) refers to IKS as “an intricate knowledge acquired over generations by communities as they interact with the environment. Indigenous knowledge (IK) consists of cultures and traditional practices of ethnic nationalities, and indigenous technological capacity in agriculture, fishing, forest resources exploitation, environment management and knowledge transmission”. While Chisenga (nd: 94) uses both IK and IKS interchangeably to connote the same, the World Bank (WB) and Southern African Research and Documentation Centre (SARDC, nd: np) define IKS as “a body of knowledge and beliefs built by a group of people, and handed down generations through oral tradition, about the relationship between living beings and their environment. It includes a system of organizations, a set of empirical observations about the local environment, and a system of self-management that governs resource use.”

While the importance of IKS cannot be underscored (World Bank report, 2004: 2), the mere danger of its extinction (Ikoja-Odongo, 2004: 175) means that there is a major need for its audit. Thornton (2001: 129) posits that information auditing and mapping allows for the identification of current implementations, responsibility for the maintenance of data, and the discovery of areas in which improvements can be made or duplications eliminated.

Information auditing is the process of discovering and evaluating the information resources of organizations with the aim of implementing, maintaining or improving information management systems (Buchanan & Gib in Thornton, 2001: 128). Ikoja-Odongo (2004:175) defines an information audit as a yardstick for ensuring conformity to standards. He further believes that auditing is meant to discover, check and verify the indigenous knowledge systems (IKS) within a given country, and the country’s ability to deal with this knowledge. Botha and Boon (2003: 23-24) contend that auditing is a recognized management technique providing managers with an overview of the present situation in keeping with specific resource(s) and services within an organization. They further state that auditing “entails the systematic examination of the information resources and the management of these in an organization” (Botha and Boon 2003: 23). The main purpose of an audit is to determine what the information requirements of an organization are, and how the information centre can best fulfil these needs. It also evaluates the effectiveness of an existing information system in order to determine effective ways of making their operation and services relevant (Öcholla, nd: 41).

Management in this study covers the way IKS are managed in terms of the existing laws, policies, and structures in place, and whether there are any funding allocations for the same. Various audit related studies have been carried out, such as by Kiplang’at (2004), Majanja (2004), Ikoja-Odongo (2004) and Ikoja-Odongo (2002).

The aim of this study was to map and audit Indigenous Knowledge Systems and management practices in South Africa. Its main objective was to unearth and map current IK environment management practices. This objective was reflected in the following research questions:

- Which IK systems are currently available in South Africa?
- Which national policies and strategies on IK currently exist in South Africa?
To get an entire overview of the current status quo of IK management practices, the study focused on policies and legislation, structures and governance, centre and systems, programmes and activities, and research and documentation in South Africa.

It is with this in mind that the study undertook a survey in order to identify what IKS exist, how much South Africa has done with regard to IKS, and whether there are any policies and legislations for the same. The survey was also intended to address the status quo of IKS in South Africa, and how they are managed.

2. Background information on South Africa
South Africa is often referred to as the Cradle of Humankind. This is because it is where archaeologists discovered 2.5 million-year-old fossils of our earliest ancestors, as well as 100 000 year old remains of modern man (SA Govt. website, 2007).
According to Statistics South Africa (Stats SA), the population of South Africans was estimated at about 46.9 million in mid-2005. Black Africans were in the majority (about 37.2 million) and constituted about 79%. The white population was estimated at 4.4 million, the coloured population at 4.1 million, and the Indian/Asian population at 1.1 million (SA Govt. website, 2007).
The South African population consists of the following groups: the Nguni (consisting of the Zulu, Xhosa, Ndebele and Swazi people); the Sotho-Tswana, who include the Southern, Northern and Western Sotho (Tswana people); the Tsonga; Venda; Afrikaners; English; Coloureds; Indians; and those who have immigrated to South Africa from the rest of Africa, Europe and Asia, and maintain a strong cultural identity. A few remaining members of the Khoi and the San also live in South Africa (SA Govt. website, 2007).
The Constitution of the Republic of South Africa, 1996 (Act 108 of 1996), mandates that everyone has the right to use their language and to participate in the cultural life of their choice, but no one may do so in a manner inconsistent with any provision of the Bill of Rights. Each person also has the right to instruction in their language of choice where this is reasonably practicable. It is for this reason that the constitution recognizes eleven official languages, namely Afrikaans, English, isiNdebele, isiXhosa, isiZulu, Sesotho sa Leboa, Sesotho, Setswana, siSwati, Tshivenda and Xitsonga (SA Govt. website, 2007).
Recognizing the historically diminished use and status of indigenous languages, the Constitution expects government to implement positive measures to elevate the status and advance the use of these languages. According to Census 2001, isiZulu is the mother tongue of 23.8% of the population, followed by isiXhosa (17.6%), Afrikaans (13.3%), Sesotho sa Leboa (9.4%), and English and Setswana (8.2% each). The least-spoken indigenous language in South Africa is isiNdebele, which is spoken by 1.6% of the population (SA Govt. website, 2007).
Although English is the mother tongue of only 8.2% of the population, it is the language most widely understood, and the second language of most South Africans. However, government is committed to promoting all the official languages (SA Govt. website, 2007).
The Constitution gives directives on how local government is structured. The Municipal Structures Act, 1998 (Act 117 of 1998), contains criteria for determining when an area must have a category A municipality (metropolitan municipalities) and when municipalities fall into category B (local municipalities) or C (district areas or municipalities). The Act also states that category A municipalities can only be established in metropolitan areas (SA Govt. website, 2007).
The Municipal Demarcation Board determined that Johannesburg, Durban, Cape Town, Pretoria, the East Rand and Port Elizabeth be declared metropolitan areas. Metropolitan councils have a single metropolitan budget, common property rating and service-tariff systems, and a single employer body. South Africa has six metropolitan municipalities,
namely Tshwane, Johannesburg, Ekurhuleni, EThekwini, Cape Town and Nelson Mandela. There are 231 local municipalities, and 47 district municipalities (SA Govt. website, 2007). Metropolitan councils may decentralize powers and functions. However, all original municipal, legislative and executive powers are vested in the metropolitan council. In metropolitan areas, there is a choice of two types of executive systems: the mayoral executive system, where executive authority is vested in the mayor; and the collective executive committee, where these powers are vested in the executive committee (SA Govt. website, 2007).

Non-metropolitan areas consist of district councils and local councils. District councils are primarily responsible for capacity-building and district-wide planning (ibid).

3. Methodology

The auditing of various documents on policies, strategic plans and legislation relating to Indigenous Knowledge was executed. The study targeted policies and legislation, structures and governance, centres and systems, programmes and activities, and research and documentation in South Africa. Ministry of science and technology (MoDST) is the government body that is responsible for policies and legislations on IKS. The study was largely qualitative, and hence applied non-probability sampling techniques. Different sampling techniques were used. Firstly, cluster sampling was applied. This technique is suitable when a researcher lacks a good sampling frame (Neuman, 2000: 209). There were five clusters, highlighted earlier in this section. It is from these clusters that we were able to apply the purposive sampling technique. The purposive sampling technique was applied to select centres/activities in the Ministry of Science and Technology and Arts and Culture that deal with IK. The centres/activities were drawn from the sampling frame provided by the Ministry of Arts and Culture. This largely formed a fair representation of cultural diversity and various levels of knowledge management development. Snowball sampling was used to enable us to connect with the key subjects through direct or indirect linkages for face-to-face interviews. Preliminary findings from face-to-face interviews provided in this report are by two management informants representing two institutions (i.e. Department of Science and Technology (DST) and Department of Arts and Culture (DAC)) and will be given in a summary due to time constraint.

Preliminary results indicate presence of IKS policy. For instance according to the Manager in-charge of Advocacy and Policy Development (APD) through the National Indigenous Knowledge Systems Office (NIKSO), there is the IKS policy which also serves as a white paper. There is still no specific law in regard to IKS but are in process of drafting new IKS legislation.

The directorate is nationally structured headed by a General Manager. It has 3 directorates each headed by a manager. The NIKSO partner/networks with other governmental departments such as:
- Trade and Industry (DTI);
- Arts and Culture (DAC);
- Department of Agriculture (DoA);
- Health (DoH);
- Environmental Affairs and Tourism (DEAT);
- Education (DoE);
- Foreign Affairs (DFA);
- Land Affairs (DLA);
- Sports and Recreation (DSR);
- Provincial and Local Government (DPLG);
- Water Affairs and Forestry (DWAF); and
- All their respective relevant statutory agencies (see IKS policy p. 27).
Various programmes and activities in relation to IKS are conducted. Examples of such are: National science week, priority setting workshop, regional SADC workshop, WIPO related workshop and Interdepartmental committee of WIPO.

On funding aspect the department deals with both organisations and individuals. Individuals should be attached to organizations or in partnership with organisations. Priority is accorded to organizations and ranking depends on the number of proposals received. Foreigners working in the country may also benefit from funding but foreign students may be considered through their supervisors.

The Deputy Director of Heritage, Department of Culture stated that they relied on the white paper but plans are under way of developing a policy on intangible cultural heritage. No act is yet available since they are still using the white paper.

The Department is headed and controlled by Deputy Director General and controlled at provincial level by Members of Executive Council of Arts and Culture (MEC’s), Head of Arts & Culture in partnership with Zululand, Fort Hare and Venda universities. Locally it is controlled by cultural desks.

Coordination is at national level with other departments such as DST, Trade & Industry, Health, and Education. Provincially they coordinate with House of traditional leaders while at local level with Zululand, Venda & Fort Hare universities.

The Department takes part in various programmes and activities such as:
• Annual Heritage celebration (different theme every year)
• Arts & Cultural competitions

The department coordinates resources on IK and has databases on IK. An example which is the register of oral sources whereby projects on various issues on IK can be accessed. National Archives controls the database whose access is restricted.

The department through finance management manages and controls the finding for IK and is restricted to organisations.

4. Results
The following is an overview of IKS policies and legislations, structures, centres and systems, activities, and research trends encountered in the preliminary findings of the auditing process.

4.1 Legislation and policies
South Africa’s bid to promote, protect and preserve IK is demonstrated in various acts, policies and other documentation. For instance, the constitution (Act 108 of 1996) aims at appreciating promoting indigenous languages (see section on background of South Africa).

South Africa also has a well-established intellectual property framework in place (see table I below). Statutes are guided primarily by equivalent British and European Patent Convention legislation (Wolson, 2001: 3).
Table 1: Core South African IP legislation

<table>
<thead>
<tr>
<th>TYPE OF IP</th>
<th>AGENCY</th>
<th>ACT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patents</td>
<td>Dept of Trade &amp; Industry</td>
<td>Patents Act, 1978</td>
</tr>
<tr>
<td>Trade Marks</td>
<td>Dept of Trade &amp; Industry</td>
<td>Trade Marks Act, 1993, 1963</td>
</tr>
<tr>
<td>Copyright</td>
<td>Dept of Trade &amp; Industry</td>
<td>Copyright Act, 1978</td>
</tr>
<tr>
<td>Registered designs</td>
<td>Dept of Trade &amp; Industry</td>
<td>Designs Act, 1993, 1967</td>
</tr>
</tbody>
</table>

Source: Wolson, 2001: 3

The IKS policy, launched by the Ministry of Science and Technology, is the main driving force and guiding factor where IKS is concerned. This policy is an enabling framework designed to formulate and strengthen the contribution of IK to social and economic development in the country (IKS Policy, 2004: 11). The policy seeks to recognize, promote, protect and develop IKS on its own terms (NIKSO, nd: 3).

The Department of Arts and Culture has spearheaded a national language policy and is investigating the promotion and copyright of indigenous music and art forms. Traditional Health Practitioners legislation has been developed by the Department of Health and mandates the establishment of a regulatory body to be known as the Traditional Health Practitioners Council, that will preside over the activities of approximately 200 000 South African traditional healers (IKS Policy, 2004: 10). In addition, the department of Science and Technology, together with other government departments and stakeholders, embarked on the implementation of the policy while working closely with other departments, such as Trade and Industry, Health, and Environmental Affairs and Tourism. This was also highlighted by respondents interviewed. The three key deliverables that emerged from this process are a system of recording indigenous knowledge, an intellectual property system that reflects IKS, and the appropriate positioning of indigenous knowledge based businesses within small business development (IKS Policy, 2004: 5).

The Department of Agriculture, directorate of plant production, has a policy on indigenous food crops. This policy conceptualizes and proposes possible solutions with regard to agricultural issues.
4.2 Structures and Governance

4.2.1. The Department of Science and Technology (DST)

The Department of Science and Technology (DST) established the National Indigenous Knowledge Systems Office (NIKSO), which looks at IKS from a science and technology perspective. The NIKSO functions as a Chief Directorate and has the three directorates headed by a manager.

1. Advocacy and Policy Development (APD)
2. Knowledge Development (KD)
3. Knowledge Management (KM)

4.2.2. Advocacy and Policy Development (APD)

APD’s main focus is on the development of legislations and policies both at national and regional levels. The directorate deems the mobilization and management of a variety of stakeholders as vital, while the IKS policy provides the collaboration between all stakeholders from government departments, science councils, tertiary institutions, NGOs, knowledge holders, and other parts of Africa.

The key objectives of APD are:
- Development of legislation and policy
- Development of a regional policy on the protection of IK and IKS
- Managing international funding
- Advocacy
- Information dissemination
- Protection and promotion of IK and IKS

The APD directorate participates in international structures dealing with intellectual property, e.g. the Intergovernmental Committee (IGC) and World Intellectual Property Organization (WIPO). The directorate also co-ordinates the interdepartmental committee on IK, where its purpose is to provide advice and direction on matters relating to IKS within the government of South Africa (NIKSO, nd: 5).

4.2.3. Knowledge Development (KD)

The main objective of KD is to provide strategic leadership in the field of research and development on IKS. The directorate operates within the National Systems of Innovation (NSI) of the Department of Science and Technology DST. It is also guided by national priorities like HIV/AIDS, poverty, skills development, and quality of life. The objectives of KD are the:

- Facilitation of the positioning of IKS within NSI
- Coordination of IKS Research Agenda
- Establishment of IKS Chairs
- Establishment of IKS Centres of Excellence
- Establishment of IKS Laboratories
- Advancing international and regional partnership in research, scholarship and professional programmes

The directorate achieves these objectives by setting up national research agendas in collaboration with knowledge holders and practitioners, researchers, leaders, government departments, science councils, and academic institutions (NIKSO, nd: 6).
4.2.4. Knowledge Management (KM)

The KM directorate provides the infrastructure, capacity, facilitation and expertise for the development and management of effective solutions to advance IK and IKS within the country’s economical and social environment. Its main objectives are as follows:

- Development and implementation of an IKS knowledge management policy
- Development of an IKS databank
- Development and maintenance of databases
- Development of IK holders and practitioners
- Protection and promotion of IK and IKS
- Information dissemination of IKS

The KM directorate gives attention to the development, integration and management of all IKS related databases. The creation of databases serve a wider purpose in providing and enhancing innovative capacity relating to trademarks, patents, copyrights, geographical indicators etc.; for the protection of IKS (NIKSO, nd: 7). The NIKSO main objective is to coordinate government’s efforts in the development of IKS. Thus far, it has achieved the following:

- Currently finalizing the establishment of the IKS National Advisory Committee
- Supporting research in IKS through the NRF
- Meetings with a number of tertiary education institutions have been convened to conceptualize IKS Centres of Excellence on Curriculum Development
- IKS chairs have been established with higher education institutions
- An interface has been created between IK and the educational system by participating in National Science Week
- Development of a strategy for public understanding and awareness of IKS
- A conceptual document has been developed for the establishment of a system that records IKS

Recently, the department considered proposals for the establishment of an audit of databases in various institutions (NIKSO, nd: 3).

4.2.5. Department of Arts and Culture

The Department of Arts and Culture seeks to preserve and develop South Africa’s richly diverse cultural, artistic and linguistic heritage.

Its mission is to:

- Develop and promote arts and culture in South Africa and mainstream its role in social development
- Develop and promote the official languages of South Africa and enhance the linguistic diversity of the country
- Improve economic and other development opportunities for South African arts and culture nationally and globally through mutually beneficial partnerships, thereby ensuring the sustainability of the sector
- Develop and monitor the implementation of policy, legislation and strategic direction for the identification, conservation and promotion of cultural heritage
- To guide, sustain and develop the archives and information resources of the nation in order to empower citizens with full and open access to these resources
4.3 Centres and Systems

4.3.1 National Heritage Council (NHC)

The National Heritage Council is mandated by the National Heritage Council Act, 1999 (Act No. 11 of 1999). The objectives of the council are to:

- Develop, promote and protect the national heritage for present and future generations
- Co-ordinate heritage management
- Protect, preserve and promote the content and heritage which reside in ‘orature’ in order to make it accessible and dynamic
- Integrate living heritage with the functions and activities of the council and all other heritage authorities and institutions at national, provincial and local level
- Promote and protect indigenous knowledge systems, including but not limited to enterprise and industry, social upliftment, institutional framework and liberatory processes
- Intensify support for the promotion of the history and culture of all our peoples, and particularly to support research and publication on enslavement in South Africa

The council has the following functions, powers and duties as outlined in the NHC Act of 1999.

It must:

- Advise the Minister on:
  i. National policies on heritage matters, including IKS, living treasures, restitution and other relevant matters; and
  ii. Any other matter concerning heritage which the Minister may from time to time determine.
- Advise the Minister on the allocation of core funding to the declared cultural institutions
- Investigate ways and means of affecting the repatriation of South African heritage objects presently being held by foreign governments, public and private institutions, and individuals
- Make grants to any person, organization or institution in order to promote and develop national heritage activities and resources
- Co-ordinate activities of public institutions involved in heritage management in an integrated manner to ensure the optimum use of state resources
- Monitor and co-ordinate the transformation of the heritage sector, with special emphasis on the development of living heritage projects
- Consult and liaise with relevant stakeholders on heritage matters
- Generally support, nurture and develop access to institutions and programmes that promote and bring equity to heritage management
- Promote an awareness of the history of all our peoples, including the history of enslavement in South Africa
- Lobby in order to secure funding for heritage management and to create a greater public awareness of the importance of our nation’s heritage
- Perform such duties with respect to its objectives as the Minister may assign to it (NHC website & Annual Report)

4.3.2 Agricultural Research Council

The ARC was established by the Agricultural Research Act 86 of 1990 (as amended) and is the principal agricultural research institution in South Africa. It is a schedule 3A public entity in terms of the Public Finance Management Act 1 of 1999, as amended by Act 29 of 1999.

The Act sets out the objectives of the ARC as the “conducting of research, development & technology transfer in order to:
Promote agriculture & industry;
Contribute to better quality of life;
Facilitate/ensure natural resource conservation” (ARC Website).

This function is carried out via 10 research institutes whose activities are grouped under five divisions:

i. grain and industrial crops;
ii. horticulture;
iii. livestock;
iv. natural resources; and
v. engineering, and sustainable rural livelihoods (ibid).

The ARC is also responsible for maintaining national assets and undertaking programmes or rendering services that are required from time to time by the department and other stakeholders (ARC Website).

A key programme cluster in this plan of action focuses on biodiversity, biotechnology and indigenous knowledge, with priorities relating to the development of new technologies and creating capacity to ensure the sustainable use of these technologies. The plan also seeks to encourage the sharing and transfer of technologies which can contribute to some of the core aspects of socio-economic upliftment on the African continent. The broad goals and objectives of this plan resonate with the ARC’s core mandate and are therefore pertinent to the ARC strategy (ARC Strategic Plan, 2007 – 2012: 8). In addition, the institute paves the way to use its expertise to contribute to the achievement of the seven MDGs, and also focuses its research on:

- Vegetables, indigenous vegetables and flowers including medicinal plants, medicinal bulbs and fynbos
- Vegetatively propagated vegetables including potato, sweet potato, cassava, indigenous roots and tubers
- Suitable open-pollinated vegetable varieties (Research Highlights, 2006: 5)

4.4. Programmes and Activities
A programme is a group of activities directed towards achieving defined objectives and targets (NZHS, 2000). An activity is a specific task or grouping of tasks that provides a specialized capability, service or product based on a recurring government requirement (DoDEA, 2004). The operational definition of the aforementioned terms in this study will take programmes to refer to those events that are regular and have been budgeted for. Activities, on the other hand, will mean events that are carried out of necessity and that are inconsistent. These normally occur to fill a gap or create awareness. Table 2 below cites examples of such.
Table 2: IKS Programmes and Activities

<table>
<thead>
<tr>
<th>PROGRAMMES/ACTIVITIES</th>
<th>FREQUENCY</th>
<th>BODY RESPONSIBLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-harvest activities thru farmers days, seed fairs</td>
<td></td>
<td>ARC</td>
</tr>
<tr>
<td>Animal promotions plant</td>
<td>Annual</td>
<td>Dept. of Agriculture</td>
</tr>
<tr>
<td>On-farm conservation</td>
<td>Annual</td>
<td>Dept. of Agriculture</td>
</tr>
<tr>
<td>On-farm duplication project</td>
<td>Annual</td>
<td>Dept. of Agriculture</td>
</tr>
<tr>
<td>Annual Heritage Month</td>
<td>N/A</td>
<td>Dept. of Arts and Culture</td>
</tr>
<tr>
<td>Lithuli lecture</td>
<td>Annual</td>
<td>Heritage Institutions, DAC</td>
</tr>
<tr>
<td>South African Museum Association</td>
<td>Annual</td>
<td>Heritage Institutions, DAC</td>
</tr>
<tr>
<td>National Science Week</td>
<td>Annual</td>
<td>DST</td>
</tr>
<tr>
<td>Regional Workshop SADDC on protecting IKS</td>
<td>Annual</td>
<td>DST</td>
</tr>
<tr>
<td>Interdepartmental Committee of WIPO</td>
<td></td>
<td>DST</td>
</tr>
<tr>
<td>National Archives week</td>
<td>Annual</td>
<td>National Archives</td>
</tr>
<tr>
<td>Ngoma (zindala zombini) festival</td>
<td>Annual</td>
<td>National Archives</td>
</tr>
<tr>
<td>Heritage awards</td>
<td>Annual</td>
<td>NHC</td>
</tr>
<tr>
<td>Ubuntu</td>
<td>Annual</td>
<td>NHC</td>
</tr>
<tr>
<td>National Living Treasures</td>
<td>Annual</td>
<td>IKSSA</td>
</tr>
<tr>
<td>IKS festival</td>
<td>Annual</td>
<td>IKSSA</td>
</tr>
<tr>
<td>Heritage awareness</td>
<td>Regular</td>
<td>NFI</td>
</tr>
</tbody>
</table>

4.5 Research and Documentation

Besides various research that has been carried out in this region, there is the Indilinga journal, which aims to contribute to the ongoing, global discourse on indigenous knowledge (Mkabela, 2004: iii).

Developments in IKS in South Africa since 1996 - when the focus on IKS was magnified and the research direction and emphasis became more inclusive of knowledge-holders and practitioners (although this still has a very long way to go before reaching desired and appropriate levels), and issues of intellectual property and benefit-sharing started to be debated more vigorously - have given rise to other sets of challenges (Mosimege, 2004: 81).

Many institutions have a database of some kind related to medicinal plants and traditional medicines, including the CSIR, National Botanical Institute (NBI), Medical Research Council (MRC), Agricultural Research Council (ARC), universities and technikons (universities of technology). Often, these databases have no reference at all to one another. Other institutions have other types of databases. The CSIR, for example, in addition to the databases on the bio-prospecting work done by the Bio/Chemtek Business Unit, has a database of the indigenous technologies used by the universities in the period 1996–1998. This database, which is in the process of being transferred to DST for further analysis, needs to be integrated with other databases in order to better depict IKS in South Africa (Mosimege, 2004: 81).

An analysis of multiple databases in EBSCOhost (i.e. Academic Search Premier, Business Source Premier, Eric, Masterfile, Medline, International Bibliography of Theatre & Dance), Thompson Web of Science (formerly ISI), Access to Global Online Research in Agriculture (AGORA), Health InterNetwork, Access to Research Initiative (HINARI), African Journals Online (AJOL), and Access to Global Online Research in Agriculture (AGRICOLA): reveals
that there is a lot that has been researched on and in South Africa. There are quite a number of local databases reflecting on IKS, examples being:
- SABINET
- National Automated Archival Information Retrieval Systems
- National Register of Oral Sources
- National Register of Manuscripts
- National Register of Photographs
- Tertiary Institutions: Recordings and other databases have been made by the following universities: University of KwaZulu-Natal; University of Johannesburg; Databases on Provincial Audits at North West University – Mafikeng Campus; University of Limpopo; University of Venda for Science and Technology; University of Fort Hare; University of Transkei; University of the Free State – Qwaqwa campus; University of Pretoria – Mamelodi Campus; and the University of Zululand (Mosimege, 2005: 7)

Conclusion
The government of South Africa has expressed commitment to the “recognition, promotion, development, protection and affirmation of IKS” as reflected in a recent policy document entitled ‘Indigenous Knowledge Systems’ (see http://www.dst.gov.za) produced by the Department of Science and Technology of South Africa. The document’s introduction reflects on African cultural values in the face of globalization, highlights the development of services by Traditional Healers, and discusses the contribution of IKS to the economy and how IKS interfaces with other knowledge systems. The other seven chapters highlight IKS and the National System of Education and Innovation, the Governance and Administration of IKS, Institutional Framework, Funding for IKS, Policy and Legislative Regulatory Framework, Human Resource Development and Capacity Building, and IKS Information and Research Structures. There has been remarkable progress made thus far in the development of IKS structures, governance and administration; also reflected in the IKS policy document alluded to earlier and in section 4.2 of this paper. The support for the creation of IKS governance and administration structures provides a strong foundation for IKS development. The process of creating and developing IKS centers and systems currently in progress and a framework for this development is provided in the IKS policy focusing on databases, libraries, museums, oral forms of IK, IKS laboratories and IKS centers. Universities and research councils are likely to play a key role as well. Although not entirely exhaustive, there is evidence that IKS programmes and initiatives are in place, as reflected with the examples in Table 1. A more comprehensive inventory of such programmes and activities needs to be compiled for evaluation.

Lastly, it is noted that although IKS research and documentation exists, the recordal systems are not comprehensive. What appears in the listed databases and institutions may not fully reflect on-going and completed research and publication output.

The challenges facing IKS development in South Africa, in our view, lie in the refinement and revision of policies, implementation of existing policies and initiatives, and the evaluation of their effectiveness for the development and application of IKS in national development.

Notes
- ARC Agricultural Research Council
- DoDEA Department of Defense Education Activity
- CSIR Council of Scientific and Industrial Research
- IKSSA Indigenous Knowledge Systems of South Africa Trust
References

Access to Global Online Research in Agriculture (AGORA). Online
URL: http://www.aginternetwork.org
Accessed 12th March 2007

African Journals Online (AJOL). Online
URL: http://www.ajol.info/
Accessed 12th March 2007

Agricultural Online Access (AGRICOLA). Online
URL: agricola.nal.usda.gov/
Accessed 12th March 2007


ARC Strategic Plan, 2007 – 2012. online. url: http://www.arc.agric.za


Centre for Minority Rights Development. Online
URL: http://www.cemiride.info/aboutus.asp
Accessed 7th March 2007

Chisenga, J. (nd). Indigenous knowledge: Africa’s opportunity to contribute to global information content. Indilinga - african journal of indigenous knowledge systems


Department of Science and Technology (DST), (2004.). Indigenous Knowledge Systems (IKS) Policy

DoDEA. (2004). Department of Defense Education Activity. Online
URL : http://www.dodea.edu/CSPO/definitions.htm
Accessed 9th March 2007
Auditing the Indigenous Knowledge Systems (IKS) in South Africa: Challenges and Opportunities

EBSCOhost database. Online
URL: http://web.ebscohost.com/
Accessed 12th March 2007

indigknow.occpap_41.html
Accessed: 11 Apr. 2007

Health InterNetwork Access to Research Initiative (HINARI) database. Online
URL: http://www.healthinternetwork.org/scipub.php
Accessed 12th March 2007


Accessed 12th March 2007

Accessed 12th March 2007


International Development Research Centre (IDRC) and Dene Cultural Institute. (1992). capturing traditional environmental knowledge. Online
URL: http://www.idrc.ca/openebooks/644-6/
Accessed 10th March 2007

Information Sciences Institute (ISI) database. Online
URL: http://scientific.thomson.com/index.html
Accessed 12th March 2007


Online Accessed 6th November 2006

Southern Africa Bibliography Network (SABINET) Website. Online

Southern Africa Research and Documentation Centre (SARDC) Website. Online


**Explanation to key legislative terms**

- **Green Paper:** discusses the issues to be considered and examines alternative options
- **White Paper:** makes policy recommendations, taking into account feedback on the Green Paper
- **Bill:** attempts to translate the policy recommendations into law
- **Act:** sets down the law and is of binding force and effect (Wolson, 2001: 9).
Marginalized Knowledge: An Agenda for Indigenous Knowledge Development and Integration with Other Forms of Knowledge

Dennis Ocholla12 (docholla@pan.uzulu.ac.za)
Department of Library and Information Science
University of Zululand
South Africa

Abstract
The purpose of this paper is to re-examine Indigenous Knowledge (IK) in order to suggest an agenda for its development and integration with other forms of knowledge. The paper discusses what marginalization of IK mean, examines the challenges of integrating IK in the mainstream of other forms of knowledges and suggests agenda for IK development. The suggested agenda focuses on mapping and auditing IK capacity in Africa, legal and ethical issues, IK management, IK education and training, integration of IK and KM, IK brain drain. The paper recommends that information on IK be widely shared for evaluation, use and further development.

1. Introduction
Present day’s literature proffers several definitions of Indigenous Knowledge. The broadest of these (e.g. NRF, n.d.), which we intend to use, defines IK as a “complex set of knowledge and technologies existing and developed around specific conditions of populations and communities indigenous to a particular geographic area” with an emphasis on how “these forms of knowledge have hitherto been suppressed... therefore, IKS should be brought into the mainstream of knowledge in order to establish its place within the larger body of knowledge”. Essentially, Indigenous Knowledge (i.e., local/traditional/folk knowledge, ethno science) is a dynamic archive of the sum total of knowledge, skills and attitudes belonging to and practiced by a community over generations, and is expressed in the form of action, objects and sign language for sharing. Numerous examples13 (e.g Kaniki and Mphahlele 2002:4-6)) exist as to how IK thrives in beliefs, medicine (traditional African medicine using herbs), community development (e.g. communality or the ubuntu support system), art and craft (e.g. pottery), sealing, energy production through charcoal burning), education (knowledge transfer through generations), communication and entertainment (festivals, drama, songs, dances, story telling)” what we could call today as “reading clubs”, farming practices (soil conservation, intercropping, farm rotation), food technology (fermentation techniques, preservation), and arts and crafts (e.g. painting, curving, weaving, decoration). These skills, knowledge and attitudes, when shared, adapted and refined, sustain communities, and bring development in areas such as healing (e.g. alternative/traditional/herbal medicine, physical and mental fitness · acupuncture, yoga, tai-chi: Maasai’s treatment of foot and mouth disease or Fulani treatment of cattle ticks with euphoria plants), nutrition (e.g. vegetarian cuisine, hoodia stem/cactus used by San people/clan to stave off hunger and control thirst/ “slimming drug” on hunting trips), wealth/income/business (e.g. intellectual property, tourism, informal sector or SMEs), education (e.g. customs, traditions, culture, language), entertainment (e.g. traditional music and dance), politics (conflict resolution through indaba, baraza, imbizo, kgotla etc.), architecture and design (housing · some wonderful African architecture exists in Egypt and South Africa; clothes/attire), industry (the informal sector) and countless more.

12 Dennis Ocholla (PhD) is Professor and Head of the Department of Library and Information Science, University of Zululand, South Africa.
13 http://www.worldbank.org/afr/ik/basic.htm
One of the focus area in Knowledge Management (KM) is the conversion of intangible knowledge (i.e. Indigenous Knowledge – IK) to tangible knowledge. Nonaka and Takeuchi (1995:62) define intangible knowledge as personal knowledge that is created through individual experiences. This knowledge is largely embedded within the culture and traditions of individuals or communities. Tangible knowledge, on the other hand, is recorded, documented or codified knowledge, widely conveyed through formal language, i.e. textual, electronic or digital. The manner in which this kind of knowledge is presented has made its storage, conveyance and sharing extremely easy and its popularization overwhelming. However, Nonaka and Takeuchi (1998:8) caution that tangible and intangible knowledge are not entirely two separate entities – they supplement each other. This is an area in which the integration of IK in mainstream knowledge, and more particularly in Knowledge Management, is inadequate. Knowledge, according to the two authors, is created and extended through the social interaction between tangible and intangible knowledge, and may follow four basic patterns:

- Intangible to intangible (socializing) – where individuals share intangible knowledge through personal contact.
- Intangible to tangible (externalization) – where the knowledge base is extended by the codification of experience, insight and judgment so that it may be utilized by others.
- Tangible to tangible (combination) – where individuals combine the tangible knowledge of others to create a new whole.
- Tangible to intangible (internalization) – where individuals use the codified knowledge of others to broaden their own intangible knowledge.

The purpose of this paper is to re-examine Indigenous Knowledge (IK) in order to suggest an agenda for its development and integration with other forms of knowledge.

2. What does the marginalization of IK mean?
Marginalization refers to exclusion – a state of being left out or insufficient attention to something for example IK. Although Indigenous Knowledge (which is still largely tacit or intangible) is inseparable from any realistic knowledge and Knowledge Management or classification paradigm, marginalization of IK has occurred over the years, and has retarded its development and integration. While IK has existed within our communities since time immemorial – indeed, there is no community that does not have elements of IK – the degree of such possession varies, and seemingly the more a community possesses or practices it, the more the individual or community is marginalized or stigmatized. There are many speculative causes or reasons as to why this occurs. Of these, one stems from the characteristics of IK, i.e.: tacit knowledge is not codified or systematically recorded and therefore difficult to transfer or share; it lives solely in the memory of the beholder and is mostly oral, meaning that unless transferred, it dies with the beholder; it is embedded in the culture/ traditions/ideology/language and religion of a particular community and is therefore not universal and difficult to globalize; and it is mostly rural, commonly practiced among poor communities and is therefore not suitable in multicultural, urban and economically provided communities. The marginalization of IK can also be seen in light of how some global organizations, such as the World Bank and NUFFIC, associate IK with the poor. For example, in the World Bank website, “Indigenous knowledge is also the social capital of the poor, their main asset to invest in the struggle for survival, to produce food, to provide for shelter or to achieve control of their own lives” 14.

14 http://www.worldbank.org/afr/ik/basic.htm
Marginalization has also occurred because families and communities are becoming increasingly disintegrated and globalised, a trend that may have stemmed from the push and pull of technologies, and the over-extensive supply of mass products, services and mass media gadgets and content to private spaces where IK once thrived.

During periods of domination, which have been varyingly described with terms such as forced occupation, invasion, colonialism, servitude, apartheid, ethnic cleansing and imperialism; IK was subject to yet another level of marginalization. It was often referred to in a negative or derivative manner, with phrases such as primitive, backward, archaic, outdated, pagan and barbaric. This demeaning reference did not create space for IK's integration with other forms of knowledge, commonly referred to as scientific, western or modern knowledge (largely products of explicit knowledge). Thus, if a community or a person recognized and utilized IK more, then that community or person was supposedly inferior to those that practiced the opposite. Put simply, a person or community practicing or using IK was stigmatized.

Therefore in order for an individual/community to be admitted into 'civilized' or modern society, that individual/community had to abandon practicing and using IK. IK was vindicated, illegitimated, legalized, suppressed and abandoned by some communities, and the countries and peoples practicing it were condemned and associated with out datedness, a characteristic most people find demeaning. This form of marginalization produced a generation that for the most, does not understand, recognize, appreciate, value or use IK. Arguably, this situation has produced an intellectually "colonized" mindset. These are communities that the celebrated world novelist, Ngugi wa Thiongo, in his essay “Decolonizing the Mind: The Politics of Language in African Literature” consider to be intellectually colonized. The question is how much have they gained through losing? Or put another way, how much have they lost through gaining?

Marginalization has also been fuelled by stereotypes. There has been a tendency to associate IK with traditional communities. Studies on IK tend to focus on the poor, the developing countries, on the Aborigines of Australia, the Maoris of New Zealand, the Saskatchewan of Canada, the Red Indians of the United States, the Maasai of Kenya etc. The nature of these studies raises problematic questions, i.e.: Are the studies done to improve the welfare of the communities? Or are they done to demean such communities? Would such studies be done in order to gain and share knowledge on how well the communities solve problems using Indigenous Knowledge systems and methods? Are they done to unravel or demystify the stereotype paradigm? Alternatively, are such studies merely adventurous outlets justifying where research money has been spent? Would it not perhaps also be interesting to study the Indigenous Knowledge of western or industrialized communities? Whereas much can be gained from IK studies conducted on any community in the world (since each community contains elements of IK), the demeaning tendency to focus IK studies on traditional and poor communities has been an added cause to marginalization.

Ultimately, has marginalization occurred in the way we define IK in relation to broader knowledge or in the context of knowledge management? A worth challenging definition of knowledge in this context is that of Bells where, “knowledge is that which is objectively known, an intellectual property, attached to a name or a group of names and certified by copyright or some other form of social recognition [e.g publication]”(Bell, 1973:176). Bells definition of knowledge is a good example of modern or Eurocentric definitions of knowledge that can easily be used to marginalize/exclude Indigenous Knowledge, particularly if knowledge must be “attached to a name or a group of names and certified by copyright or some form of social recognition”. This could be a biased approach that favors modern knowledge, recognizes explicit knowledge at the expense of tacit knowledge, and emphasizes codification and the ownership of knowledge that IK does not necessarily comply with
3. Challenges of integrating IK with other forms of knowledge

Fundamentally, integrating IK with other forms of knowledge first begins with knowledge creation and development processes that can be viewed in six steps, all of which are recognized by the World Bank (See Indigenous Knowledge for Development: a Framework for Action (199815). The first step or process include recognition and identification, in that IK has to be recognized, identified and selected from a multitude of other knowledges. Step two involves IK’s validation/affirmation by identifying its significance, relevance, reliability, functionality, effectiveness and transferability. This signifies an ability to support problem solving. For example, the HIV/AIDS scourge, particularly in Africa, has invited a number of IK experimentations, most of which have not been validated (i.e. tested over time and used for problem solving) culminating in disasters in many cases. There are also interesting IK developments and practical achievements16 that are worth considering. Step three involves codification/recording / documentation. Explicit knowledge thrives because of its tangibility, sharability, transferability and storability etc., all of which originate from knowledge recordal system. Although there are some contestations to the recording of IK - the argument being that IK owners easily loose moral and material ownership of their intellectual property or capital, which is renegade to third parties - explicit knowledge thrives because of its visibility, access and use. The fourth step consists of the storage of IK for retrieval. This requires the creation and development of IK repositories requiring taxonomies, databases, recording, indexing, and preservation for easy access and use. The IK database developed by the World Bank17 and those listed by Le Roux (2003) are essential examples. However, although IK databases are a brilliant idea, reliable content within the databases would be of greater value. For example, the World Bank database reflects only three records on South Africa, as indicated in Table 1, and 17 on Kenya (see Table 3).

Table 1. Indigenous Knowledge records search results in the World Bank database on South Africa

<table>
<thead>
<tr>
<th>No.</th>
<th>Country</th>
<th>Domain</th>
<th>Technology</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>South Africa</td>
<td>Education</td>
<td>Curriculum Development</td>
<td>Integrating non-formal education to reform official schooling</td>
</tr>
<tr>
<td>188</td>
<td>South Africa, Southern</td>
<td>Health Nutrition &amp; Population</td>
<td>Traditional Medicine</td>
<td>A potato, a traditional medicinal plant used to treat chronic viral and bacterial diseases and some forms of cancer, is now recognized by physicians to boost the immune system of HIV-infected people.</td>
</tr>
<tr>
<td>241</td>
<td>South Africa</td>
<td>Agriculture Extension</td>
<td></td>
<td>Differences between farmers and scientists in the perception</td>
</tr>
</tbody>
</table>

17 17http://www.worldbank.org/afr/ik/databases.htm
Agriculture of soil erosion: a South African case study


Source 18

Item 445 has been a highly contested/controversial issue in South Africa’s debate regarding IK intellectual property rights (see table 2 for illustration).

Table 2: Example of IK Intellectual Property Rights Agreement in South Africa.

**Practice title:** A Landmark Agreement Recognizing the San’s Intellectual Property Rights regarding their traditional knowledge of the Hoodia plant  
**Country:** South Africa  
**Domain:** Health Nutrition & Population  

**Technology:** Intellectual Property Rights  
**Bearers of Knowledge:** The San peoples living in Angola, Botswana, Namibia, and South Africa  
**Summary:** On March 24, 2003, after years of negotiations and uncertainty, representatives of the San peoples of southern Africa and representatives from South Africa’s Council for Scientific and Industrial Research (CSIR) signed a benefit-sharing agreement for a drug being developed from a traditional mainstay of the San diet – the Hoodia plant. The Hoodia has been traditionally used by the San to treat stomach pain and eye infections, among other applications. On long hunting trips through the desert, San chewed on the stem of the Hoodia to suppress their hunger and thirst and boost their energy. In 1995, CSIR researchers discovered its qualities as an appetite suppressant, isolated the compound, called P57, in the plant that curbs hunger, and obtained a patent for it in 1996. The San pointed out that the Hoodia’s distinctive properties were the exclusive traditional – and communal – knowledge of the San, passed down for centuries. Seeking acknowledgement of this fact, and of the collective ownership of this knowledge by the broader San community, they sued in 2000, which began a long process of negotiation with CSIR that only recently succeeded. The San stand to receive six percent of all royalties when the drug reaches the market. They plan to invest the money, and only tap into the interest generated to fund community projects. This benefit-sharing agreement between a local research council and the San people represents enormous potential for future collaboration, not only for the San but also for other holders of

18: http://www4.worldbank.org/afr/ikdb/ik_results.cfm
Marginalized Knowledge: An Agenda for Indigenous Knowledge Development and Integration with other forms of Knowledge

traditional knowledge.

**Lesson:**


**Email:**

**URL:** Cultural Survival


Examples from Kenya also draw significant interest largely because of the Maasais indigenous knowledge that has received minimal recognition.

**Table 3. Indigenous Knowledge records search results in the World Bank database on Kenya**

**IK Database Search Results**

To view details click on practice title.

Your search returned 17 record(s).

<table>
<thead>
<tr>
<th>No.</th>
<th>Country</th>
<th>Domain</th>
<th>Technology</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Kenya</td>
<td>Agriculture</td>
<td>Agriculture</td>
<td>Botanical knowledge of the Maasai</td>
</tr>
<tr>
<td>41</td>
<td>Kenya</td>
<td>Health Nutrition &amp; Population</td>
<td>Traditional Medicine</td>
<td>Medicinal use of plants to alleviate health problems of both human and livestock.</td>
</tr>
<tr>
<td>42</td>
<td>Kenya</td>
<td>Environment</td>
<td>Biodiversity, Conservation</td>
<td>Taboos restrict felling of trees in the Maasai steppe.</td>
</tr>
<tr>
<td>43</td>
<td>Kenya</td>
<td>Agriculture, Environment</td>
<td>Agricultural Meteorology</td>
<td>Weather forecasting on the basis of astronomy and ecology.</td>
</tr>
<tr>
<td>44</td>
<td>Kenya</td>
<td>Agriculture, Environment</td>
<td>Biodiversity, Taxonomy</td>
<td>Use of plants and animals determines their taxonomy.</td>
</tr>
<tr>
<td>46</td>
<td>Kenya</td>
<td>Agriculture</td>
<td>Taxonomy</td>
<td>Classification of livestock disease names assists the Maasai in sharing knowledge, diagnosing diseases and preventing their impact.</td>
</tr>
<tr>
<td>51</td>
<td>Eastern Africa Region, Kenya</td>
<td>Agriculture, Health Nutrition &amp; Population</td>
<td>Biodiversity</td>
<td>Traditional societies in East Africa use wild plants for different purposes and means to survive.</td>
</tr>
<tr>
<td>58</td>
<td>Eastern Africa Region, Education</td>
<td>Informal Education</td>
<td>Informal Education</td>
<td>Storytelling is the traditional means to bridge past and present and to transfer ethical</td>
</tr>
</tbody>
</table>

Kenya, Tanzania

| 63 | Kenya | Health Nutrition & Population | Traditional Medicine | Use of plants for their antibiotic effects. |

See 20:

Evidently, creating meta-data capturing capabilities and multiple storage approaches is becoming increasingly essential. Step five borders on IK transfer. Such transfers go beyond focusing on human recipients. Following this, step 6, would be the dissemination and use of IK. Use of knowledge put it to testing, acceptance and further validation for development. Therefore in essence, the six steps or processes are essential if the gap between IK and other forms of knowledge is to be closed.

The second consideration for integration borders on pragmatism. Thus, what can we reap from IK. Other forms of knowledge have thrived because of their functions or importance or benefits. The recognition and development of IK is picking up momentum, largely due to the benefits being derived from it. For example, as already been mentioned, IK is increasingly being used for health services, particularly herbal/traditional/alternative medicine and in agriculture, among others. Reported activities and practices of IK by the World Bank in “IK notes on Indigenous Knowledge” (200621), which covers 93 documents from 1998 – largely focusing on Africa and Eastern and Southern Asia (e.g India and Sri Lanka) · shows ongoing activities and practices of tremendous achievement in the field of traditional medicine and health practices, agriculture, biodiversity, education, natural resource management, conflict management, energy generation and preservation etc; that are of great benefit to the communities in question. Additionally, business and trade through tourism has created significant interest in indigenous food, arts and craft (weaving, painting, sculpture and pottery). Significant growth has also been driven by pharmaceuticals. Unfortunately, most IK practices are currently being held in the informal sector/unregulated economy, and are therefore subject to abuse. It is acknowledged22 that IK provides skills, experiences and insights into individuals and communities which may, in turn, be used to improve the livelihoods of those mostly situated in the informal sector of the economy. Furthermore:

- “IK provides local communities · especially the poor · with problem solving strategies
- IK is an important contribution to global development knowledge
- IK systems risk extinction
- IK is relevant for the development process
- IK is an under-utilized resource in the development process

Thus, learning from IK by investigating first what local communities know and have, can assist with understanding local conditions and provide a productive context for activities designed to help the communities23

However, this document strongly views IK to be a survivalist instrument of development, meaning that its use is likely to occur less in areas where the lives of communities are better, or beyond the norm of survival. Will this be the case with pharmaceuticals or IK

20 http://www4.worldbank.org/afr/ikdb/ik_results.cfm
22 http://www.worldbank.org/afr/ik/basic.htm
practitioners or even IK users, some of whom are not poor, and do not belong to the rural community? Put another way, how many people are employed in the IK industry who are not poor or come from the poor communities? Despite the rather sad denigration of IK, the World Bank recognizes that IK could be relevant in at least three levels of development, the first being that it is important in the local community in which the IK knowledge owners live and practice. Secondly, development agents such as NGOs, civil society, and governments, need to recognize, value, and appreciate it whilst integrating with local communities. Essentially, before incorporating IK into their approaches, they need to understand and critically validate it against the usefulness of their intended objectives. There are unique examples, such as South Africa’s recent policy document on “Indigenous Knowledge Systems”24 produced by the Department of Science and Technology, where government has integrated IK health workers, such as traditional healers, into mainstream national health care services by legislating a “Traditional Health Practitioners Legislation”. This mandates the establishment of a “Traditional Health Practitioners Council to preside over the activities of approximately 200 000 South African Traditional Healers”. According to the referred to document above, the “Traditional Medicine Strategy of World Health has noted that the use of traditional medicine is widely growing within Africa alone, as up to 80% of its population uses traditional medicine for their health needs, largely due to accessibility and affordability”. Thirdly, Indigenous Knowledge forms part of the Global Knowledge System. In this context, it has a value and relevance in and of itself. Thus, IK can be preserved, transferred, or adopted and adapted anywhere in the world. Some of the World Bank achievements as at 2005, in areas such as integrating IK in Bank projects [18 cases], mainstreaming IK in development [14 cases], building capacity to facilitate IK exchanges [22 cases], collection and dissemination of IK [12 cases] and building partnerships [10 cases]25 are of great significance.

The third consideration is epistemological. The nature, origin, foundation, limitations and validity of IK requires further exploration and interrogation. For example Agrawal (2004), among others, identifies the key issues in a manner that poses the following questions: How does IK differ from scientific/modern/western knowledge? How do the two differ in dealing with immediate/concrete necessities as opposed to distant and abstract issues? What are the methodological and epistemological differences? And what are the contextual differences? It is therefore necessary to provide more epistemological content, concept and context to IK in order to broaden its understanding and application to research and education in Africa and wherever else there’s such a need.

4. Agenda for IK development

- Mapping and auditing IK capacity in Africa (e.g. health, agriculture and food, trade and tourism). This may involve creating: an awareness of IK policies, legislations and strategies; management structures, programmes and activities; research output and recordable activities; centers and systems; support and funding; and knowledge holders and practitioners. This agenda appears to have been echoed also by Kaniki and Mphahlele (2002:14) as well as being given attention by the Department of Science and Technology 26 of South Africa but not necessarily in other countries of Africa.

• Legal and ethical issues (e.g. policy, legislation, intellectual property rights). The issue of the San people alluded to earlier is an example of why legal issues are important.
• IK management issues that borders on management structures within a country or institution, research, visibility-publication [see Ocholla and Onyancha 2006]), IK databases, creation of an IK website for its publicity and promotion [see Le Roux 200327] are equally valid issues.
• Education and training (e.g. workshops, seminars, conferences, short courses, IK knowledge fair, sharing of Best Practices, IK market place, popularization of IK, for instance in schools and in the curriculum of education institutions), which extends to the teaching of African history and literature (see African Writers Series works written by Ngugi wa Thiongo, Chinua Achebe, Wole Soyinka, etc.) to students, thus bringing them closer to indigenous context.
• Integration of IK with KM. This should feature in KM research and teaching, curriculum development, publications, funding etc.
• IK brain drain. This first occurs in instances when an IK holder dies with knowledge that has not been widely shared through knowledge codification. Thus, when an IK holder dies, a whole community library disappears without trace. This type of brain drain is frequently ignored, yet quite important. Similarly, brain drain occurs in the form of migrated archives, where the IK of a community is displaced or transferred from its original location to a foreign location, thereby rendering access and use difficult or impossible. The third instance occurs when a community’s IK disappears due to the displacement or relocation of community members as a result of natural or artificial courses/disasters such as war, flooding, or urbanization.

5. Conclusions
The achievements made so far in the revival of Indigenous Knowledge, such as in South Africa and by the World Bank and other organizations, should be encouraged, supported and interrogated for further development within the country [SA] and in other parts of the world.

Notes:
A shortened version of this paper was presented at the African Information Ethics Conference on the 5-8th February 2007 in Pretoria. The final version is published in the International Review of Information Ethics in 2007.

References


27 http://www.worldbanank.org/afrik/databases.htm


Dennis N. Ocholla 28 (docholla@pan.uzulu.ac.za),
Department of Library and Information Science
University of Zululand
South Africa

And

Lyudmilla Ocholla29 – (locholla@pan.uzulu.ac.za)
University of Zululand Library,
University of Zululand,
South Africa

Abstract
This paper intends to promote an awareness of the overall research output in library and information science in South Africa, and is based on a publication count and analysis of peer refereed articles indexed in the LISA and Thompson Scientific(formerly ISI) Web of Science databases between 1993 –2006, using journal, subject and author indicators for the analysis. The recommendations are in favour of expanding the publication threshold by diversifying the output such that it includes currently marginalised domains.

Introduction
Whereas there is no consensus on the best way to measure research output in a given discipline, most members of the scientific community, particularly those in favour of quantitative measures of research (see ISSI conferences), concur that peer refereed journals offer a verifiable platform/source of measuring the research productivity of scholars. Even in this area, there is a strongly held view that the journal impact factor [of peer refereed journals] (e.g. determining the degree of cited-ness of articles in a journal) should be used to determine the most important and influential research journals and research papers/articles in a discipline. The Citation Impact Factor (CIF), proposed by Eugene Garfield in 1969 (Garfield, 1994 :411), is defined as the average number of citations in a given year of articles published in a journal in the preceding two years. Normally, citations received in one year are divided by papers published in the two previous years in order to obtain the ratio. The approach used to determine the quality of research has therefore not been uniform. Evidently, there are those who are in favour of qualitative measures of research (e.g. Gorman 2000, Calvert and Gorman 2002) and also strong proponents of peer review as a measure of research quality (e.g. Harnad 199530). Simultaneously, there are those who are in favour of citation analysis and the journal impact factor as a quantitative measure of research output (e.g. Garfield 1971, 1972,1994, 1998). For example, when defending qualitative measures of journal quality as opposed to quantitative measures based on citedness or the impact factor, Calvert and Gorman argue that “The fact that paper x is cited y times is not an indicator of quality, but rather that it is cited –it is available, it is in the journal held by many libraries, the author (or publisher or editor) is particularly good at self-promotion” (Calvert and Gorman 2002:1). Harnad has always provided peer review with overwhelming support and defence. In one of his seminal articles on peer review he (Harnad 1998: paragraph one)

28 Dennis Ocholla (PhD) is Professor and Head of the Department of Library and Information Science, University of Zululand as well as Editor-in – Chief South African Journal of Libraries and Information Science, South Africa
29 Lyudmilla Ocholla is Information Librarian, University of Zululand Library, South Africa.
30 http://www.princeton.edu/~harnad
argues that journals should not be free from the “process of peer review, whose ‘invisible hand’ is what maintains its quality”. Although other forms of research output, such as books, conference proceedings, reviews, theses and dissertations, patents, and other research reports of limited circulation are used to measure research output, journal articles are still the most dominant, favoured and easily verifiable for quality control in scientific research. Each country, and in some cases institution, determines their research quality in different ways. For example, a quality research output in South Africa will appear in a prescribed list of 255 South African Journals31 Thompson Scientific(ISI) databases32 and IBSS databases33, and will not include correspondence with the editors, abstracts or extended abstracts, obituaries, book reviews, news articles and adverrtorials. For each article published in such a journal, a substantial government research subsidy · which in itself is regularly revised and increased · is paid to the author's affiliate institution, which then decides on how to share the subsidy with the authors/contributor.

The first part of this analysis was based on the output of graduate (masters and doctoral) dissertations and theses from 1993 to 2000, as reported at the 66th IFLA conference held in Jerusalem (Ochalla, 2000). The variables included gender, language, population group, institutional affiliation, subject, and the quantity and output of both masters and doctoral theses over that period. It was observed that the preponderance of theses was produced at masters level in the English language by women, and that the universities of Natal [now KwaZulu Natal] · Pietermaritzburg campus, Pretoria, and the Rand Afrikaans University (now the University of Johannesburg) lead in productivity. Additionally, the multidisciplinary nature of the information science exhibited elements of boundary crossing, collaboration and borrowing from computer science, business management, geography, music and political science in graduate research output. Although this analysis has not been extended to 2006 due to the closure (in 2001) of the unit previously indexing research output at Potchefstroom University (now part of the University of the North West), the productivity pattern reported by Ochalla (2000) has not changed much. However, there are marginal variations, for example other universities that did not feature well in that study (such as the University of Zululand) have made significant progress during the last six years, more publications are emerging from the formerly marginalised communities largely through co-publication with established researchers/ postgraduate masters and doctoral research supervisors.

Bibliometric/Informetric studies are widely used to inform policies and decisions in political, economical, social and technological domains affecting information flow and the use pattern within, between and outside institutions and countries. Although Library and Information Science (LIS) studies of this nature solve problems related to collection development, information retrieval, systems design, user studies, management, and knowledge organisation, among others, in Africa bibliometric studies are limited. Those focusing on LIS are insignificant, with the exception of a few studies reported largely by West African scholars such as Aina (1998), Aina and Mabawonku (1997), Aina and Mooko (1999), Alema and Badu (1994), Alema (1996; 2001), Kadiri (2001), and Mabawonku (2001). There are a few noted studies in South Africa by Boon and van Zyl (1990), Ochalla (2000: 2001) and Ngulube (2005a: 2005b). This study adds to the cited studies by providing, in general, an awareness of the overall research output from within the Library and Information Science discipline in South Africa based on a publication count of peer refereed articles appearing in national and international LIS journals, specifically those indexed in LISA and ISI databases. This is in order to determine whether diversification and output with regard to

31 http://www.education.gov.za
32 http://www.isinet.com/isi/journals/index.html
33 http://www.lse.ac.uk/collections/IBSS/access/Default.htm
authors, journals and subject coverage and research collaboration has occurred over the period. The paper therefore attempts to address the following questions: In which journals do the LIS authors (SA) publish and why? What is the publication rate and trend overall, and particularly between 1993 and 2006? What are the overall publication counts by author and comparatively between LISA and ISI during the period? What is the authors’ overall publication count, cites and ratio in ISI Web of Science, and what is the publication trend by leading authors during this period? In what subject domains are the articles published? What is the type and nature of research collaboration? What are the author's institutional affiliations? And what are the implications of the data to LIS research in South Africa?

2. Methodology
Publication count and analysis was used to determine the nature, type and range of research output in Library and Information Science in South Africa. The productivity of authors was analysed using the parameters outlined in the research questions in the preceding section. A master list of 218 LIS researchers (both potential/novice and established) was compiled from authors of masters and doctoral dissertations/theses appearing in the South African Bibliographic Network (SABINET) on-line from 1993-200034 largely used in part one of this study (see Ocholla 2000). The list has been supplemented by 220 names of authors appearing in the South African Journal of Library and Information Science between 1993 and 2006, Mouisain from 2003-2006, South African Journal of Information Management from 2004 – 2006, and Innovation (unfortunately it is neither indexed as a peer refereed Journal by LISA nor indexed in Web of Science) in 2006 based on the dates when the journals were recognised and included in the list of research journals by the Department of Education of South Africa (i.e. for government research quality recognition and publication subsidy purposes). After filtering the list and discarding names of authors who have not published in peer refereed journals indexed in LISA and Thompson Scientific(ISI), 250 author’s names were selected and included in the master list for further searches. Both Library and Information Science Abstracts (LISA) and ISI Web of Science (includes the Science Citation Index Expanded File[SCI] and Social Sciences Citation Index File[SSCI]) and Arts and Humanities Citation Index File(A&HSS) databases were targeted in order to search for each author’s journal publication record. Only articles in peer refereed journals appearing in LISA were selected from the database, while only journal articles were selected from ISI Web of Science. LISA is considered to be one (besides of course, Information Science Abstracts (ISA) and Library Information Science and Technology Abstracts * LISTA) of the largest LIS abstract databases, indexing, among others, well over 550 periodicals/journals from over 60 countries in 20 different languages. Journals appearing in LISA are also categorised into peer refereed journals. Thompson Scientific Web of Science (SCI, SSCI A&HCI) indexes the most important, credible and influential research publications, largely articles assumed to exhibit a significant impact factor on a given discipline. This includes over 8,830 titles from 230 disciplines consisting of 6,125 active journals and 145 highly cited book series from SCI, 1800 active journal titles and 30 highly cited book series in SSCI as well as 1,130 active journals and 15 highly cited book series in A&HCI. Only authors producing one or more peer refereed articles in LISA were selected for the analysis. Of the 250 authors, only 67 were indexed in ISI Web of Science. Upon creating an author authority list, searches were done in the two databases by author name, which was much easier in ISI authors’ finder because a search with author surname yields all the other initials or string name combinations for that author, and more complicated in LISA, where author name combinations are complicated. Data was captured and downloaded in Excel spreadsheets and organised by author name, frequency of publications, by database (ISI and LISA), source/format of publication (e.g. Journal), the subject domain developed from the subject descriptors, and nature of collaboration (developed from the author list and addresses only from ISI). An analysis was conducted with the help of

34 http://www.ifla.org/IV/ifla66/papers/054-127e.htm
descriptive and inferential statistics using Excel software programs. The Pivot Table in Excel made the analysis extremely flexible and relatively simple. The results are provided in the next section.

3. Results and Discussions

The results are categorised by journal, author, subject, and collaboration output.

3.1 Output in LISA and ISI Journal

A total of 157 journals (titles) generated 1216 articles produced by 250 authors (this includes authors appearing in both LISA and ISI), of which 67 were also based in ISI. Of the 157 journals, 87 (54.4%) and 70 (44.6%) were indexed by LISA and ISI respectively. The journals appearing in both LISA and ISI were 12 (7.6%). The leading three journals, namely the South African Journal of Libraries and Information Science (a Library and Information Association of South Africa-LIASA journal), Mousaion (University of South Africa-UNISA based) and the South African Journal of Information Management (University of Johannesburg based), produced 563 (46.3%) of the total number of articles indexed in LISA based journals. Unfortunately, none of the three journals are indexed by ISI. Among the journals, 305 (25.1%) articles came from the South African Journal of Libraries and Information Science, 145 (11.9%) came from Mousaion, and 113 (9.3%) articles originated from the South African Journal of Information Management. These three Journals are also listed among three other journals (Indilinga: African Journal of Indigenous Knowledge, Innovation and ESARBICA) in the list of 255 South African journals (from all disciplines) selected for the research recognition and subsidies mentioned earlier. The top three non-South African Journals were LIBRI (36 articles in LISA and 32 in ISI), the African Journal of Library and Archives and Information Science (32 articles in LISA), and the Electronic Library (28 LISA and 18 ISI). Other journals with significant scores were Education for Information (26 LISA and 15 ISI), Library Management (24 for LISA), International Information and Library Review (22 LISA and 13 ISI) and the Journal of Information Processing and Management (20 for LISA and 20 for ISI). Notably, unlike LISA, journal indexing in ISI is inconsistent, as some journals are withdrawn by ISI upon failing to comply with their rigid indexing criteria (Table 1 ISI section shows the demise of several journals between 1993-2006). Newcomers in the ISI indexing list, such as the Journal of Information Ethics, had no articles by South Africa based authors as yet indexed by ISI. Perhaps because of the indexing time lag, i.e. the period between the publication of a paper in the public domain and the date it is captured in abstracting and indexing journals (see Diodato 1994), despite ISI provision of access to accepted papers/articles awaiting publication. The publication pattern as indexed in LISA and ISI between 1993 and 2006 is reflected in Table 1.

Table 1. Publication Output and Trend in LISA and Web of Science (ISI), Journal and author 1993-2006

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>South African Journal of Libraries and Information Science,</td>
<td>35</td>
<td>30</td>
<td>36</td>
<td>35</td>
<td>37</td>
<td>27</td>
<td>7</td>
<td>8</td>
<td>19</td>
<td>13</td>
<td>18</td>
<td>23</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>Mousaion</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>20</td>
<td>9</td>
<td>9</td>
<td>6</td>
<td>5</td>
<td>8</td>
<td>8</td>
<td>10</td>
<td>16</td>
<td>18</td>
<td></td>
</tr>
<tr>
<td>South African Journal of Information Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libri</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African Journal of</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Library, Archives and Information Science:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic Library</td>
<td>3</td>
<td>5</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education for Information:</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library Management:</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>9</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Information and Library Review:</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Processing &amp; Management:</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aslib Proceedings,</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Journal of Information Management,</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alexandria:</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal of Documentation:</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library Review:</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Research:</td>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal of Librarianship and Information Science,</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Library and Information Science Research:</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interlending and Document Supply:</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**JOURNALS : Web of Science**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Libri</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>8</td>
<td>5</td>
<td>6</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Processing &amp; Management</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electronic Library</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASLIB Proceedings</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Information &amp; Library Review</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal of Documentation</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal of Information Science</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International Journal of Information Management</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reference &amp; User Services Quarterly</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RQ</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information Retrieval</td>
<td>3</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

69
3.2. Author Publication Pattern

The analysis includes non-South African residents who have either produced co-authored articles with South African residents, published in South African LIS journals, completed their masters or doctoral studies in South African academic institutions, or lived/resided in South Africa before but migrated to other countries, as captured for the master list. As presented in Table 2, 250 authors published 960 articles indexed in the LISA database, while 67 published 256 articles (26.2%) indexed in ISI databases. The top 4 most productive authors, whose articles are indexed in ISI, do not reside in South Africa, while all top 10 authors indexed in LISA, except for one, reside in South Africa. Furthermore, of the top 20 authors indexed in LISA, 15 are indexed in ISI. A total of 542 cites from 256 articles (average 2.2 cites per article) are noted, with both the largest number of articles (41·Jarvelin K., 13·Pirkola A. and 11·Andersen, J·Siddiqui, M.A.) and cites (259·Jarvelin and 55·Pirkola) originating from non residents. South African residents’ highest cites originate from Cosijn’s co-authored paper (of 2) with Ingwersen (25 cites), in the Journal of Information Processing and Management in 2000, Dick’s one paper of 4 (15 cites) in Library Quaterly in 1995, Behren’s one article of one (25 cites), and Du Toit.s 18 cites (from 9 articles). The highest citation ratios originate from Behrens (25.00), Cosijn (12.50), Jarvelin (6.32), Mountifield (6.00), Jacobs (5.50), Pirkola (4.23), Dick (3.75) and Botha (2.67). Citation counts were only based on ISI Web of Science indicators. Only authors of two or more papers in LISA are represented in Table 3, while all the authors in ISI are included in the table.

Table 2. Publication output by author in LISA and ISI Web of Science

<table>
<thead>
<tr>
<th>Journal of the American Society for Information Science and Technology</th>
<th>1</th>
<th>3</th>
<th>1</th>
<th>1</th>
<th>1</th>
</tr>
</thead>
<tbody>
<tr>
<td>College &amp; Research Libraries</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Education for Information</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Journal of Government Information</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Journal of Librarianship and Information Science</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Library &amp; Information Science Research</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Context: Nature, Impact, and Role, Proceedings</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Information Research An International Electronic Journal</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Interlending &amp; Document Supply</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

LISA(N=250)  
ISI (N=67)
<table>
<thead>
<tr>
<th>No</th>
<th>Ran</th>
<th>Author</th>
<th>Article No</th>
<th>Ran</th>
<th>Author</th>
<th>Article No</th>
<th>Ran</th>
<th>Author</th>
<th>Article Cites Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Brakel, P A v</td>
<td>31 69</td>
<td>22</td>
<td>Theron, J C</td>
<td>4 1</td>
<td>1</td>
<td>Jarvelin, K</td>
<td>41 259 6.32</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Ocholla, D N</td>
<td>28 70</td>
<td>22</td>
<td>Tobin, Peter K J</td>
<td>4 2</td>
<td>2</td>
<td>Pirkola, A:</td>
<td>13 55 4.23</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Toit, A S D d</td>
<td>27 71</td>
<td>22</td>
<td>Walt, M S v d</td>
<td>4 3</td>
<td>3</td>
<td>Andersen, J:</td>
<td>11 17 1.55</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Jarvelin, K:</td>
<td>26 72</td>
<td>22</td>
<td>Walker, C M</td>
<td>4 4</td>
<td>5</td>
<td>Siddiqui, MA</td>
<td>11 14 1.27</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Britz, J J</td>
<td>24 73</td>
<td>22</td>
<td>Weideman, Melius</td>
<td>4 5</td>
<td>5</td>
<td>Britz, JJ</td>
<td>9 10 1.11</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Fourie, I</td>
<td>23 74</td>
<td>23</td>
<td>Auret, H E</td>
<td>4 6</td>
<td>6</td>
<td>Du Toit, ASA</td>
<td>9 18 2.00</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Lor, P J:</td>
<td>21 75</td>
<td>23</td>
<td>Darch, C:</td>
<td>3 7</td>
<td>6</td>
<td>Lor, PJ</td>
<td>9 7 0.78</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>Dick, A L</td>
<td>18 76</td>
<td>23</td>
<td>Plessis, M D:</td>
<td>3 8</td>
<td>6</td>
<td>Snyman, RMM</td>
<td>9 1 1.11</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>Aina, L O</td>
<td>16 77</td>
<td>23</td>
<td>Edwards, H M</td>
<td>3 9</td>
<td>6</td>
<td>Van Brakel, P</td>
<td>9 5 1.08</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Snyman, R</td>
<td>15 78</td>
<td>23</td>
<td>Geustyn, M:</td>
<td>3 10</td>
<td>6</td>
<td>Aina, LO</td>
<td>8 5 0.63</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>Siddiqui, M A</td>
<td>14 79</td>
<td>23</td>
<td>Kok, J A</td>
<td>3 11</td>
<td>7</td>
<td>Fourie, I</td>
<td>7 10 1.43</td>
</tr>
<tr>
<td>12</td>
<td>11</td>
<td>Stilwell, C</td>
<td>14 80</td>
<td>23</td>
<td>Kruger, Cornelius J.</td>
<td>3 12</td>
<td>8</td>
<td>Ocholla, DN</td>
<td>7 11 1.57</td>
</tr>
<tr>
<td>13</td>
<td>11</td>
<td>Beer, C S d d</td>
<td>14 81</td>
<td>23</td>
<td>Lange, M d:</td>
<td>3 13</td>
<td>8</td>
<td>Nassimbeni, M</td>
<td>5 2 0.40</td>
</tr>
<tr>
<td>14</td>
<td>12</td>
<td>Snyman, M P</td>
<td>13 82</td>
<td>23</td>
<td>Marais, H:</td>
<td>3 14</td>
<td>9</td>
<td>Ngulube, P</td>
<td>5 2 0.40</td>
</tr>
<tr>
<td>15</td>
<td>12</td>
<td>Machet, M H:</td>
<td>13 83</td>
<td>23</td>
<td>Mitchell, C</td>
<td>3 15</td>
<td>10</td>
<td>Boon, JA</td>
<td>4 4 1.00</td>
</tr>
<tr>
<td>16</td>
<td>12</td>
<td>Moahi, K H:</td>
<td>12 84</td>
<td>23</td>
<td>Mooko, N P:</td>
<td>3 16</td>
<td>11</td>
<td>Chisenga, J:</td>
<td>4 4 1.00</td>
</tr>
<tr>
<td>17</td>
<td>12</td>
<td>Olen, S I</td>
<td>12 86</td>
<td>23</td>
<td>Morris, C:</td>
<td>3 18</td>
<td>11</td>
<td>Ikoja-Odongo, R:</td>
<td>4 3 0.75</td>
</tr>
<tr>
<td>18</td>
<td>13</td>
<td>Behrens, S J</td>
<td>12 87</td>
<td>23</td>
<td>Myers, G</td>
<td>3 19</td>
<td>11</td>
<td>Myers, G:</td>
<td>4 3 0.50</td>
</tr>
<tr>
<td>19</td>
<td>14</td>
<td>Boon, J A</td>
<td>11 88</td>
<td>23</td>
<td>Plessis, M D:</td>
<td>3 20</td>
<td>11</td>
<td>Stilwell, C</td>
<td>4 2 0.50</td>
</tr>
<tr>
<td>20</td>
<td>15</td>
<td>Bothma, T J D</td>
<td>11 89</td>
<td>23</td>
<td>Popoola, S O</td>
<td>3 21</td>
<td>11</td>
<td>Botha, RA:</td>
<td>3 8 2.67</td>
</tr>
<tr>
<td>21</td>
<td>15</td>
<td>Chisenga, J</td>
<td>11 90</td>
<td>23</td>
<td>Raju, R</td>
<td>3 22</td>
<td>12</td>
<td>de Hamel, C</td>
<td>3 0 0.00</td>
</tr>
<tr>
<td>22</td>
<td>15</td>
<td>Jager, K D</td>
<td>11 91</td>
<td>23</td>
<td>Morgan, G C:</td>
<td>3 17</td>
<td>11</td>
<td>Dick, AL</td>
<td>4 15 3.75</td>
</tr>
<tr>
<td>23</td>
<td>15</td>
<td>Raubenheimer, J</td>
<td></td>
<td>23</td>
<td>12 du Plessis, M</td>
<td>3 23</td>
<td>12</td>
<td>du Plessis, M</td>
<td>3 4 1.33</td>
</tr>
<tr>
<td>24</td>
<td>15</td>
<td>Kruger, J A</td>
<td>11 92</td>
<td>23</td>
<td>Roux, P J A</td>
<td>3 24</td>
<td>12</td>
<td>Mabowanku, IM</td>
<td>3 4 1.33</td>
</tr>
<tr>
<td>25</td>
<td>15</td>
<td>Ngulube, P</td>
<td>11 93</td>
<td>23</td>
<td>Singh, Anesh Maniraj</td>
<td>3 25</td>
<td>12</td>
<td>Moahi, KH</td>
<td>3 0 0.00</td>
</tr>
<tr>
<td>26</td>
<td>16</td>
<td>Gericke, E</td>
<td>11 94</td>
<td>23</td>
<td>Vuren, A J V:</td>
<td>3 26</td>
<td>12</td>
<td>Penzhorn, C</td>
<td>3 3 1.00</td>
</tr>
</tbody>
</table>

71
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mabawonku, I M</td>
<td>10 95</td>
<td>23</td>
<td>Vermeulen, W M</td>
<td>3 27</td>
<td>12 Petkov, D</td>
</tr>
<tr>
<td>28</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Andersen, J</td>
<td>10 96</td>
<td>24</td>
<td>Aswegen, E S</td>
<td>3 28</td>
<td>12 Adigun, MO</td>
</tr>
<tr>
<td>29</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Berner, S</td>
<td>9 97</td>
<td>24</td>
<td>Averweg, Udo'</td>
<td>2 29</td>
<td>13 Bothma, T</td>
</tr>
<tr>
<td>30</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muller, Marie-Luce</td>
<td>9 98</td>
<td>24</td>
<td>Baard, V C;</td>
<td>2 30</td>
<td>13 Cosijn, E;</td>
</tr>
<tr>
<td>31</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pirkola, A;</td>
<td>9 99</td>
<td>24</td>
<td>Bornman, M</td>
<td>2 31</td>
<td>13 De Jager, K;</td>
</tr>
<tr>
<td>32</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underwood, P G</td>
<td>9 10</td>
<td>0</td>
<td>Cloete, Marian;</td>
<td>2 32</td>
<td>13 Dube, L</td>
</tr>
<tr>
<td>33</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hart, G</td>
<td>9 10</td>
<td>1</td>
<td>de Kock, M G;</td>
<td>2 33</td>
<td>13 Heyns, D (Heyns, Danielle);</td>
</tr>
<tr>
<td>34</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ikoja'- Odongo, J R</td>
<td>8 10</td>
<td>24</td>
<td>Deventer, M J</td>
<td>2 34</td>
<td>13 Jacobs, D;</td>
</tr>
<tr>
<td>35</td>
<td>18</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pienaar, H;</td>
<td>8 10</td>
<td>24</td>
<td>Doyle, D;</td>
<td>2 35</td>
<td>13 Lubbe, S</td>
</tr>
<tr>
<td>36</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mostert, B J</td>
<td>8 10</td>
<td>24</td>
<td>Fombad, Madeleine;</td>
<td>2 36</td>
<td>13 Meyer, HWJ</td>
</tr>
<tr>
<td>37</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bester, M</td>
<td>7 10</td>
<td>5</td>
<td>Geyser, E P</td>
<td>2 37</td>
<td>13 Mooko, NP</td>
</tr>
<tr>
<td>38</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Boekhorst, A K;</td>
<td>6 10</td>
<td>6</td>
<td>Gouws, A;</td>
<td>2 38</td>
<td>13 Olen, S</td>
</tr>
<tr>
<td>39</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fairier- Wessels, F;</td>
<td>6 10</td>
<td>7</td>
<td>Grobler, P A</td>
<td>2 39</td>
<td>13 Onyancha, OB;</td>
</tr>
<tr>
<td>40</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fourie, J A;</td>
<td>6 10</td>
<td>8</td>
<td>Harmse, C</td>
<td>2 40</td>
<td>13 Pienaar, H;</td>
</tr>
<tr>
<td>41</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hendrikz, F</td>
<td>6 10</td>
<td>9</td>
<td>Henning, J C;</td>
<td>2 41</td>
<td>13 Pretorius, EJ</td>
</tr>
<tr>
<td>42</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kaniki, A M</td>
<td>6 11</td>
<td>0</td>
<td>Kiondo, E</td>
<td>2 42</td>
<td>13 Raubenheimer, J; J</td>
</tr>
<tr>
<td>43</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kiplang'at, J</td>
<td>6 11</td>
<td>1</td>
<td>Kloppers, M</td>
<td>2 43</td>
<td>13 Snyman, MMM;</td>
</tr>
<tr>
<td>44</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Louw, A</td>
<td>6 11</td>
<td>2</td>
<td>Kwake, Alice;</td>
<td>2 44</td>
<td>13 Underwood, PG;</td>
</tr>
<tr>
<td>45</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lubbe, S;</td>
<td>6 11</td>
<td>3</td>
<td>Meyer, E</td>
<td>2 45</td>
<td>13 Weideman, M;</td>
</tr>
<tr>
<td>46</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Meyer, H W J</td>
<td>6 11</td>
<td>4</td>
<td>Mountifield, H M;</td>
<td>2 46</td>
<td>14 Averweg, UR</td>
</tr>
<tr>
<td>47</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onyancha, O B</td>
<td>6 11</td>
<td>5</td>
<td>Myburgh, S</td>
<td>2 47</td>
<td>14 Behrens SJ</td>
</tr>
<tr>
<td>48</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Raju, J S</td>
<td>6 11</td>
<td>6</td>
<td>Niemand, C J</td>
<td>2 48</td>
<td>14 Cloete, M;</td>
</tr>
<tr>
<td>49</td>
<td>20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Walt, T B v d</td>
<td>6 11</td>
<td>7</td>
<td>Nkhata, B W M</td>
<td>2 49</td>
<td>14 Coetzee, HS;</td>
</tr>
<tr>
<td>50</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brewis, W L E;</td>
<td>6 11</td>
<td>8</td>
<td>Oosthuizen, G J;</td>
<td>2 50</td>
<td>14 Doyle, D; du Toit, A</td>
</tr>
<tr>
<td>51</td>
<td>21</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coetzee, H S;</td>
<td>5 11</td>
<td>9</td>
<td>Ovens, C S H</td>
<td>2 51</td>
<td>14 du Plessis, T</td>
</tr>
</tbody>
</table>
52 21  Kigongo-Bukonya, IMN
53 21  Leach, A:
54 21  Minishi-Majanja, MK
55 21  Ponelis, S:
56 21  Rensleigh, CW
57 21  Swanepoel, A
58 21  Terblanche, F
59 21  van Zijl, C:Gerick, EM
60 22  Bruin, H d
61 22  Burger, M
62 22  Cosijn, E:
63 22  de Beer, F
64 22  Dube, L
65 22  Jacobs, D:
66 22  Mambo, HL
67 22  Oosthuizen, BL
68 22  Smith, J; C;

24  Pansegrouw, JG
24  Penzhorn, C
24  Petkov, Don
24  Radebe, T
24  Rowoldt, S
24  Shokane, j k
24  Thomson, J;
24  van den Berg, A
24  van Deventer, J P;
24  Niekert, H v;
24  Walt, P W V
24  Venter, Rudi MR
24  Venter, T
24  Willems, J
24  Witbooi, S L
25  Aitchison, Jean;

5  12  0  0
5  12  1  1
5  12  2  2
5  12  3  3
5  12  4  4
5  12  5  5
5  12  6  6
5  12  7  7
6  12  8  8
9  12  9  9
3  13  2  2
4  13  3  3
4  13  4  4
5  13  5  5
6  13  6  6
0  0  0  0
8  0  0  0
2  0  0  0
1  0  0  0
1  0  0  0
1  0  0  0
1  1  1.00
1  0  0.00
1  6  6.00
1  0  0.00
1  2  2.00
1  0  0.00
1  0  0.00
1  0  0.00
1  0  0.00
1  0  0.00
1  0  0.00

52 14 Edwards, HM
53 14 Harms, C
54 14 Hart, G
55 14 Hendrikz, F
56 14 Kigongo-Bukonya, IMN
57 14 Le Roux, S
58 14 Leach, A
59 14 Morris, C
60 14 Mountifield, HM
61 14 Murray, K
62 14 Nkatha, BWM
63 14 Ponelis, SR
64 14 Popoola, SO
65 14 Swanepoel, AJ;
66 14 van Niekerk, J
67 14 Willemse, J
73

3.3. The Subject Coverage

Information science research by subject orientation has been offered special attention in the last decade, based on the recognition that LIS research output by subject is important in the establishment of research subject orientation for research planning and policy, identifying human resource development needs in the discipline, and in determining popular research topics for research partnership and graduate enrolment (see Ocholla 2000). It is recognised that there is no universally acceptable classification scheme of LIS by subject, and the bold attempts by Jarvelin and Vakkari in the last decade (see Rochester and Vakkari 1998) to establish a classification scheme or taxonomy have not been without criticism. Attempts to obtain usable subject taxonomy from LISA and ISI were unsuccessful, as LISA does not seem
to offer one, while ISI categorisation (e.g. library science, information science, computer science or information systems etc) is too broad. A subject descriptor in Library and Information Science Abstracts was therefore used to select the main/broad subject area arbitrarily for the analysis, as reflected in Table 3

Table 3: Subject orientation

<table>
<thead>
<tr>
<th>Subject</th>
<th>Count</th>
<th>Subject</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Management: library management, knowledge management, competitive intelligence, archives and records management, information management</td>
<td>143</td>
<td>• Information industry/sector, information society</td>
<td>17</td>
</tr>
<tr>
<td>• Online information retrieval: computerized IR, S&amp;R, indexing, abstracting</td>
<td>119</td>
<td>• Academic libraries</td>
<td>14</td>
</tr>
<tr>
<td>• Information services</td>
<td>107</td>
<td>• Reading/Readership: Children's libraries/ Children's literature</td>
<td>12</td>
</tr>
<tr>
<td>• Information technology, ICTs, computer applications</td>
<td>97</td>
<td>• Intellectual property, copyright, plagiarism</td>
<td>12</td>
</tr>
<tr>
<td>• Professional education, LIS education and training</td>
<td>89</td>
<td>• Library and information science periodicals:</td>
<td>11</td>
</tr>
<tr>
<td>• University libraries, academic libraries</td>
<td>80</td>
<td>• Information communication/dissemination, publishing</td>
<td>72</td>
</tr>
<tr>
<td>• Information literacy</td>
<td>34</td>
<td>• National libraries:</td>
<td>11</td>
</tr>
<tr>
<td>• Librarianship</td>
<td>62</td>
<td>• Bibliotherapy:</td>
<td>3</td>
</tr>
<tr>
<td>• Research</td>
<td>49</td>
<td>• Library associations:</td>
<td>3</td>
</tr>
<tr>
<td>• Public libraries, South Africa</td>
<td>48</td>
<td>• National bibliographies:</td>
<td>3</td>
</tr>
<tr>
<td>• Acquisitions. Collection development, library materials</td>
<td>41</td>
<td>• Scholarly communication:</td>
<td>3</td>
</tr>
<tr>
<td>• Information literacy</td>
<td>34</td>
<td>• Business management:</td>
<td>2</td>
</tr>
<tr>
<td>• Library and information science theory</td>
<td>33</td>
<td>• Information sources:</td>
<td>2</td>
</tr>
<tr>
<td>• Information seeking</td>
<td>25</td>
<td>• Library buildings:</td>
<td>2</td>
</tr>
<tr>
<td>• Bibliometrics/informetrics/webometrics</td>
<td>18</td>
<td>• Management: Leadership:</td>
<td>2</td>
</tr>
<tr>
<td>• Classification schemes: cataloguing, bibliographic control</td>
<td>17</td>
<td>• Popular culture</td>
<td>2</td>
</tr>
<tr>
<td>• Access to information</td>
<td>17</td>
<td>• Telecommunications industry:</td>
<td>2</td>
</tr>
</tbody>
</table>

The subject coverage in LIS is diversified and covers the core areas of LIS research. Dominant research areas are management (143), information retrieval (119), Information Services (107), ICTs (97), Education and Training (89) and Information Dissemination (72).
3.4. Research Collaboration

The last part of this study focused on collaborative research output. Only data from the 256 records in ISI have thus far been used in the analysis. Research collaboration has a number of benefits, as outlined by Katz & Martin (1997). Among them, according to the authors, are: that collaboration enables researchers to share skills and techniques, and is one way of transferring knowledge (especially tacit knowledge); through clashing views it may bring about the cross-fertilization of ideas, which may in turn generate new insights or perspectives that individuals, working on their own, would not have grasped; collaboration provides intellectual companionship (i.e. within a practising community); collaboration plugs the researcher into a wider contact network in the scientific community; and it enhances the potential visibility of the work. Thus, collaboration helps speed up problem solving, stimulates creativity and enables inter-disciplinary boundary crossing, which in turn enriches knowledge development and transfer.

A total number of 145 South African authored articles were published either by single authors or co-authored. Of the 145, individual/single authored were 45 (31%), two authors appeared 78 (53.8%) times, three authors 17 (11.8%), and four authors 4 (2.8 %) times. There was one instance in which a single article (0.6%) was published by 20 authors - an internal co-publication from the University of Pretoria. As to whether collaborative publication was internal, external, external but within South Africa, or external but with foreign countries, it turned out that of the 100 co-authored articles, 55 (55%) were internal (i.e. published by colleagues from the same institution), and 45 (45%) were external (published with colleagues from other institutions). External co-authorship with South African Institutions came to 23 of 45 (51.2%), external but with non-South African institutions totalled 20 of 45 (44.4%), while external but involving both South African and foreign institutions produced 2 of 45 (4.4%). Figure 1 and Table 4 shows the nature and type of research collaboration through single or multiple publications. Evidently, there are more co-authored articles (69 %) than single-authored articles (31%). Furthermore, there is limited external (45 %) collaboration within and outside the country. Even collaboration between institutions within the country is just slightly more than half (55%) of all collaborations. Figure 1 shows the nature of institutional collaboration in the country.
Information in the y axis shows the number of single and collaborative publications by institution, while the x axis provides information on the collaborating/non-collaborating institutions. Evidently, the Universities of Pretoria, Johannesburg, Cape Town, Kwazulu Natal and Zululand are leading collaborators. The leading collaborators are established researchers with eight or seven collaborative publications. Among them are Pieter van Brakel, Adelaide Du Toit, Peter Lor, Retha Snyman and Dennis Ocholla, Ina Fourie, Archie Dick and Patrick Ngulube were leading in terms of non-collaborative publications.

**Table 4 : Type of Collaboration**

<table>
<thead>
<tr>
<th>Count of Authorship</th>
<th>AUTHORSHIP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ADDRESSES</strong></td>
<td>1 2 3 4 20</td>
</tr>
<tr>
<td>Cape Peninsula Univ Technol:</td>
<td>2</td>
</tr>
<tr>
<td>Cape Peninsula Univ Technol: University of Botswana:</td>
<td>1</td>
</tr>
<tr>
<td>Durban Univ Technol: Eastern Connecticut State Univ:</td>
<td>1</td>
</tr>
<tr>
<td>Natl Lib South Africa:</td>
<td>2 1</td>
</tr>
<tr>
<td>Nelson Mandela Metropolitan Univ:</td>
<td>1</td>
</tr>
<tr>
<td>Technikon Witwatersrand:</td>
<td>1</td>
</tr>
<tr>
<td>Tswane Univ Technol:</td>
<td>1 1</td>
</tr>
</tbody>
</table>
4. Conclusions

South African LIS researchers/authors largely publish in local journals (46.3%), led by the *South African Journal of Library and Information Science* (SAJLIS) (25.1%), *Mousaion* (11.9%), and the *South African Journal of Information Management* (9.3%). This figure would be higher if “Innovation” was included. Several factors contribute towards this trend. South Africa has a large pool/number of scholarly journals (255 titles) in all disciplines recognised and listed by the government for research recognition and subsidy, and the three cited journals are among six that fall within this category from the LIS discipline. Thus,
South African researchers have sufficient (currently six as listed in section 3.1) internal, recognised scholarly/academic journals in which they can publish research articles and be recognised and rewarded for doing so [nationally].

Publication in Thompson Scientific/ISI and International Bibliography of Social Sciences (IBSS) indexed journals is also on the increase, based on similar recognition and rewards. Notably, while more South African based researchers publish in peer refereed LISA indexed LIS journals (250 authors), publication in ISI indexed journals (67 authors) is limited. The average citations (2.2 ratio) originating from the 256 articles is insignificant, although it differs less from the citation ratio in LIS alone and when compared to other social science disciplines, as observed by Onyancha (2007). Onyancha also reveals that although South Africa publishes most of Africa’s LIS research, it receives comparatively less cites for its articles. Perhaps most articles are published in South African LIS journals (and other journals) none of which are indexed by ISI, or due to other reasons earlier cited from Calvert and Gorman (2002:1).

In terms of subject orientation, there is an impressive diversification and research focus on core areas of LIS education, such as management, information retrieval, services and dissemination, and the application of ICTs. Formidable niche areas seem to have been created by established academics, who continue to encourage more young researchers and publications in their fields of specialisation. However, we do not believe that this trend could lead to an over-saturation of specialists in a particular field at the expense of other less attended research domains. We believe that in a nascent democracy such as South Africa, specialisation should go hand in hand with diversification in order to enable the creation of capacity in marginalised fields. There is therefore potential for accelerated and enlarged publication output in the discipline in South Africa, provided that: novice/potential researchers (such as postgraduates) receive publication support from research supervisors, the government continues to pay subsidies to institutions based on accredited publication output, and institutional performance measurement indicators emphasise publication output. Thus, both quantity and quality can be maintained. The results relating to popular research topics have been compared to international trends reported by, for example, Maxine Rochester and Pertti Vakkari (1998).

Research collaboration as observed through co-authorship (69%) is encouraging, as the bulk of such collaboration increasingly occurs between the research supervisor (of largely masters and doctorates), and the postgraduate student, who tends to be a member of the staff/faculty from the supervisor’s academic institution. However, it was observed that inter – institutional research collaboration within South Africa is average (51.2% of 45), and more or less similar between South African and non-South African institutions (44.4%). We believe that inter-institutional research and international research collaboration can reap from the benefits of research collaboration currently going on within the Dissanet35 project, which focuses on promoting LIS research collaboration in South Africa. The increased research collaboration between established researchers and novice researchers and postgraduate students is commendable. We conclude that, since South Africa still leads in research and publication output in Africa (see Onyancha 2007), the rapidly growing research and publication output and support in the country offers promising opportunities for research and professional collaboration that could be explored and exploited beyond South Africa’s borders.

This study is not inclusive or conclusive, as it only focused on research publication output appearing in peer refereed journals indexed in LISA and ISI Web of Science (SCI and SSCI).

---

35 http://www.dissanet.com
between 1993-2006, for reasons discussed in the introduction (section 1). Other parts of the analysis, such as subject orientation and research collaboration (LISA is left out), are also incomplete. The study does not measure individual or institutional research output, which is more complicated (i.e. requires more variables). The question stands as to whether publication output in peer refereed journals can be used to measure/determine research output in a discipline such as LIS. We believe that an inclusive research agenda covering research quality, quantity, collaboration and diversification needs further exploration.

References


Research in Library and Information Science in South Africa: an analysis of journal research output from 1993-2006


What are the future prospects of Knowledge Management? An audit of the scholarly publications of KM and its related concepts

Omwoyo Bosire Onyancha36 (b_onyancha@yahoo.com)
University of South Africa
Department of Information Science
University of South Africa

Abstract
Forecasting future trends relies heavily on previous trends. Research and development trends in given disciplines or subject domains can be measured by an assessment of published literature. Knowledge management (KM), a relatively new concept, is no exception. Using trend analysis, this paper reports on the growth of literature on KM and its related concepts in order to draw conclusions concerning its future prospects. Data was analyzed in order to obtain the total number of records per concept: the yearly distribution of the records; citations and average cites per record; yearly distribution of the number of authors; countries of origin of the records; document types; institutional affiliation of the authors; sources that publish the literature; and subject categories that utilize KM research. Recommendations for further research are also provided.

1. Introduction
Throughout human history, people have used the past to predict what would happen in the future. However, opinion is divided on the best way to determine the future. This has given way to various ideas and practices. For instance, according to Vanston (2003), extrapolators (extrapolation) believe that the future is a logical representation or extension of the past, while pattern analysts (using pattern analysis) believe that the future is a reflection or replication of past events. In goal analysis, there is the belief that the future is determined by the beliefs of a collection of individuals, organizations and institutions, while in counter-punching; it is believed that the future is the result of a series of events and actions that are essentially unpredictable, and to a large extent, random. Finally, Vanston (2003) notes that in intuition, the future is shaped by a complex mixture of inexorable driving forces, random events, and the actions of key individuals and institutions. Each of these methods consist of a number of techniques (e.g. trend extrapolation; analog analysis; content analysis; impact analysis; scanning, monitoring and tracking, etc).

The analysis of published literature using informetric approaches in order to tell the future status of a new concept, discipline, subject domain or an activity (e.g. collaboration), is not new either. For instance, in his book entitled “Little Science, Big Science ... and Beyond”, Price observed that “the proportion of multi-authored papers has accelerated steadily and powerfully, and it is now so large that if it continues at the present rate, by 1980 the single-author paper will be extinct” (as cited in Gordon, 1980).

Although single-authored papers have not entirely disappeared, Price’s argument concerning the preference of multi-authored over single-authored papers by authors is shared by various scholars. Research has shown that single-authored articles are on the decline, while multi-authored articles are increasing (Ravi, 2001:582; Hartinah, et al., 2001:227). Cunningham (2001) also found that out of 234 papers, there were only 38 (approximately 16%) single-authored papers. Garg concurs with both Ravi and

36 Bosire Omwoyo Onyancha, PhD, is a Lecturer at the Department of Information Science
University of South Africa as well as Deputy University Librarian, University of Eastern Africa,
Baraton, Kenya.
What are the future prospects of Knowledge Management? An audit of the scholarly publications of KM and its related concepts

Cunningham, in that modern research and development is a “collective activity and generally conducted by a group rather than a single individual” (Garg, 2001:173).

Published literature is commonly used to measure or evaluate the growth of literature over time, perhaps because this is assumed to mean the growth of knowledge (Tague, Beheshti & Rees-Potter, 1981). Crane in Jacobs (2004:211) argues that literature undergoes four stages of growth, namely:

1. An initial formation stage, in which the absolute number of publications is small and the growth rate shows signs of increasing
2. The emergence of a growth period, during which the absolute number of publications grows exponentially (i.e. doubling the number of publications at regular intervals) and the growth rate is constant and large
3. A subsequent stage, whereby the annual growth of publications returns to being incremental and the growth rate shows signs of decline
4. At this stage, the growth rate and absolute number of publications decrease to zero

In their explanation of these stages, Gupta & Karisiddappa (2000:325) observe that “in Stage 1, when the paradigm appears, there is no developed social organization. In Stage 2, when normal science flourishes, invisible colleges appear. In Stage 3, with the solving of major problems and turning of anomalies, social spitting appears. In Stage 4, with the exhaustion of paradigm, the number of participants decreases”.

It has been observed that KM, as a concept that is quickly gaining recognition as a discipline in its own right, is relatively new and therefore may be at its initial stages of development. In one of relatively few informetric studies on KM, Jacobs (2004:212) notes thus:

“The survival of any emerging discipline depends on its special need and strength during the particular period in which it has emerged. Knowledge management is one such discipline, which seems to remain strong”.

Jacobs’ (2004) study sought to describe knowledge management literature by analyzing 491 records published between 1993 and 2003. The study investigated data retrieved from SCI and SSCI, and identified the most productive countries, the trend of growth, most published authors, etc. Chaudhry & Higgins (2001) investigated the state of KM education in five countries (i.e. Australia, Canada, Singapore, the UK and the USA), and found that Information systems/studies offered the most courses in KM (i.e. 40% of a total of 30 KM courses offered at the Masters level). Business administration (35%) came second, while computer science (14%) was ranked third. The authors noted that KM courses have various titles, e.g. knowledge management, knowledge management and decision systems, intelligence systems and knowledge management, etc.

2. Purpose of the study
This study builds on the aforementioned studies and seeks to examine the literature of KM and a few related concepts as published and indexed in the Science Citation Index (SCI) and Social Sciences Citation Index (SSCI) in terms of the:

1. Total number of publications
2. Yearly Distribution of the records
3. Growth of the literature between 1981-2007 by determining the number of
   i. Authors
   ii. Countries
   iii. Document types
   iv. Institutions
   v. Language
   vi. Sources
   vii. Subject categories

3. Methodology
Two sources (i.e. SCI and SSCI) were used to extract relevant data between April 10th and 14th, 2007. The two bibliographic databases, produced by the Thompson Scientific (formerly the Institute for Scientific Information), share a search platform, a situation that made it easy to conduct single searches within the two databases at the same time (see Fig 1 below).

Fig 1: ISI web of science advanced search interface

A total of 20 keywords were purposefully selected and used to extract data on KM and its related concepts. These were:

- Knowledge Management
- Intellectual Capital
- Knowledge Production
- Organizational Knowledge
- Corporate Knowledge
- Implicit Knowledge
- Explicit Knowledge
- Tacit Knowledge
- Knowledge Acquisition
- Knowledge Transfer
- Knowledge Creation
- Knowledge Development
- Indigenous Knowledge
- Repackaging knowledge
- Knowledge re-use
- Knowledge organization
- Knowledge visualization
- Knowledge representation
What are the future prospects of Knowledge Management? An audit of the scholarly publications of KM and its related concepts

- Knowledge ecosystems
- Corporate memory

These keywords were selected from a list of knowledge management-related concepts provided by Wikipedia Encyclopaedia. The selection was conducted in such a way as to include processes of knowledge management and different types of knowledge. As mentioned before, it is believed that knowledge management is at its initial stages of development and therefore although the list provided above cannot be said to be exhaustive, it is representative of knowledge management concepts. Furthermore, we assumed that we cannot determine future prospects of knowledge management if we exclude what is being managed, i.e. knowledge. Hence the inclusion of terms describing different types of knowledge, such as explicit, tacit, corporate, indigenous, and implicit knowledge.

Each of these terms was fed into the search query box as shown in Fig 1. An advanced search mode was used to search for relevant records. The search was limited to the 'TS' field. 'TS' stands for Topic field, where one enters a word or phrase to search for article titles and abstracts following certain search rules, e.g. the use of truncation, wildcards, capitalization, phrase searching, hyphenated words, apostrophes, Boolean search operators, and parentheses. Notably, all the search terms that were used in this study to extract knowledge management-related records were phrases, a situation that necessitated the use of quotation marks. The idea was to download documents that contained an exact phrase within their titles, abstracts, and/or keyword fields. Phrases which did not yield any record were excluded from the final analysis.

Data was captured and stored as txt files and cleaned of duplicate and irrelevant records using the Notepad text editor. Data analysis was conducted using Sitkis software. Sitkis is citation data processing software. The software imports ISI Web of Science files into a Microsoft Access database that can be easily modified. Sitkis also exports data from the database into UCINET compatible network graphs and Excel-compatible reports. The purpose of the program is to enable researchers to easily and quickly download and analyze bibliometric records. The software is capable of performing the following tasks:

- 2-mode factor analysis
- Calculation of article similarity based on common preferences
- Calculation of co-citation networks from article-to-reference data
- Calculation and preparation of author co-authorship networks and frequencies
- Calculation of institutional contributions and collaboration networks
- Cross-border research collaboration
- Calculation of article cross-citations
- Generation of the following types of statistics:
  - Reference statistics
  - Yearly citation statistics
  - Article statistics
  - Article / reference centrality statistics

Data was analyzed in order to obtain the total number of records per concept: yearly distribution of the records for each concept; a graph showing the trend of productivity: growth in the number of authors, institutions, countries, languages, document types, sources and subject categories; and the total number of citations and average citations per record.

4 Results
This section provides the results as follows:

1. Productivity of records on KM and its related concepts
2. Trend of productivity for each concept
3. Growth of KM literature and its related concepts
4. Subject categories utilizing and contributing to KM theory, practice and development
5. Growth in the number of records vis-à-vis citations

4.1 **Productivity of records on KM and its related concepts**
Out of the total 20 selected keywords, as explained in the methodology section, only 13 yielded at least 1 record. These include knowledge management, which produced a total of 2788 records, followed by knowledge acquisition (2461), knowledge transfer (768), tacit knowledge (750), explicit knowledge (687), indigenous knowledge (505), knowledge creation (475) and knowledge production (468). Others were knowledge development (368), organizational knowledge (329), implicit knowledge (301), intellectual capital (290), and corporate knowledge (69).

Table 1: Most productive concepts

<table>
<thead>
<tr>
<th>No.</th>
<th>Concept</th>
<th>No. of records</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Knowledge Management</td>
<td>2,788</td>
</tr>
<tr>
<td>2</td>
<td>Knowledge Acquisition</td>
<td>2,461</td>
</tr>
<tr>
<td>3</td>
<td>Knowledge Transfer</td>
<td>768</td>
</tr>
<tr>
<td>4</td>
<td>Tacit Knowledge</td>
<td>750</td>
</tr>
<tr>
<td>5</td>
<td>Explicit Knowledge</td>
<td>687</td>
</tr>
<tr>
<td>6</td>
<td>Indigenous Knowledge</td>
<td>505</td>
</tr>
<tr>
<td>7</td>
<td>Knowledge Creation</td>
<td>475</td>
</tr>
<tr>
<td>8</td>
<td>Knowledge Production</td>
<td>468</td>
</tr>
<tr>
<td>9</td>
<td>Knowledge Development</td>
<td>386</td>
</tr>
<tr>
<td>10</td>
<td>Organizational Knowledge</td>
<td>329</td>
</tr>
<tr>
<td>11</td>
<td>Implicit Knowledge</td>
<td>301</td>
</tr>
<tr>
<td>12</td>
<td>Intellectual Capital</td>
<td>290</td>
</tr>
<tr>
<td>13</td>
<td>Corporate Knowledge</td>
<td>69</td>
</tr>
</tbody>
</table>

4.2 **Productivity trends for each concept**
Table 2 and Fig 1 illustrate the publication trend in literature on KM and its related concepts. Each concept witnessed continued growth throughout the period of study. Knowledge management literature grew from a mere 12 records in 1986-1990, to a total of 1735 records in 2001-2005, a percentage increase of 14358%. Likewise, Table 2 shows that knowledge acquisition literature increased from 16 to 702 records between 1981 and 2005, while knowledge transfer records upped by a total of 365 from just 3 records in 1981-1985 to stand at 368 records by 2005. Similar patterns were revealed in other subject domains.
What are the future prospects of Knowledge Management? An audit of the scholarly publications of KM and its related concepts

Table 2: Yearly distribution of records

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Knowledge Management</td>
<td>0</td>
<td>12</td>
<td>43</td>
<td>390</td>
<td>1735</td>
<td>608</td>
<td>2788</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>Knowledge Acquisition</td>
<td>16</td>
<td>99</td>
<td>689</td>
<td>724</td>
<td>702</td>
<td>231</td>
<td>2461</td>
</tr>
<tr>
<td>3</td>
<td>3</td>
<td>Knowledge Transfer</td>
<td>3</td>
<td>9</td>
<td>58</td>
<td>126</td>
<td>368</td>
<td>204</td>
<td>768</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>Tacit Knowledge</td>
<td>6</td>
<td>5</td>
<td>75</td>
<td>180</td>
<td>350</td>
<td>134</td>
<td>750</td>
</tr>
<tr>
<td>5</td>
<td>5</td>
<td>Explicit Knowledge</td>
<td>1</td>
<td>3</td>
<td>82</td>
<td>183</td>
<td>302</td>
<td>116</td>
<td>687</td>
</tr>
<tr>
<td>6</td>
<td>6</td>
<td>Indigenous Knowledge</td>
<td>5</td>
<td>2</td>
<td>40</td>
<td>127</td>
<td>233</td>
<td>98</td>
<td>505</td>
</tr>
<tr>
<td>7</td>
<td>7</td>
<td>Knowledge Creation</td>
<td>1</td>
<td>5</td>
<td>27</td>
<td>97</td>
<td>253</td>
<td>92</td>
<td>475</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>Knowledge Production</td>
<td>13</td>
<td>1</td>
<td>30</td>
<td>102</td>
<td>231</td>
<td>91</td>
<td>468</td>
</tr>
<tr>
<td>9</td>
<td>9</td>
<td>Knowledge Development</td>
<td>8</td>
<td>6</td>
<td>53</td>
<td>118</td>
<td>152</td>
<td>49</td>
<td>386</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>Organizational Knowledge</td>
<td>0</td>
<td>1</td>
<td>20</td>
<td>76</td>
<td>165</td>
<td>67</td>
<td>329</td>
</tr>
<tr>
<td>11</td>
<td>11</td>
<td>Implicit Knowledge</td>
<td>1</td>
<td>6</td>
<td>42</td>
<td>84</td>
<td>113</td>
<td>55</td>
<td>301</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>Intellectual Capital</td>
<td>1</td>
<td>2</td>
<td>8</td>
<td>109</td>
<td>131</td>
<td>39</td>
<td>290</td>
</tr>
<tr>
<td>13</td>
<td>13</td>
<td>Corporate Knowledge</td>
<td>0</td>
<td>1</td>
<td>5</td>
<td>20</td>
<td>35</td>
<td>8</td>
<td>69</td>
</tr>
</tbody>
</table>

Fig 1: Trend of publication

Fig 1 illustrates this trend in a graphical representation that indicates that the most productive period was 2001-2005 for all subjects. Most notable is the emergence of some of the concepts between 1986 and 1990, among them being knowledge management, organizational knowledge and corporate knowledge. The rest (i.e. 10 out of 13) appeared in literature during or before the 1981-1985 year period.
4.3 Growth of KM literature

The growth of knowledge in a discipline can be measured according to various indicators. Some of these include an increase or decrease in the number of researchers conducting research within the subject domain, the institutions behind research activities, countries in which the research is conducted, publication languages, document types, sources through which the research findings are disseminated, and the subject categories that utilize and contribute theories and practices to a given discipline. Table 3 provides the growth of the literature in terms of the cited indicators. The Table reveals that the number of authors increased from 83 in 1981-1985, to 8533 in 2006-2007, while the number of countries rose rapidly over the years from 12 to 98 over the same period. Similar patterns were recorded in an analysis of document types, which made a leap from 4 in 1981-1985, to 13 in 1996-2000, and subsequently declined to 9 in 2006-2007. The number of institutions behind research, which stood at 50 in 1981-1985, rose to 130 between 1986 and 1990 (a percentage increase of 160%), and continued to its highest peak in 2001-2005 (i.e. 2565). The languages, sources and subject categories, however, have witnessed slower growth rates, as reflected in the percentage increments.

Table 3: Growth of the literature on KM and its related concepts

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Authors</td>
<td>83</td>
<td>259</td>
<td>2080</td>
<td>3823</td>
<td>8237</td>
<td>8533</td>
</tr>
<tr>
<td></td>
<td>Increase in number of authors</td>
<td>-</td>
<td>176</td>
<td>1821</td>
<td>1743</td>
<td>4414</td>
<td>296</td>
</tr>
<tr>
<td></td>
<td>Percentage increase</td>
<td>-</td>
<td>212.05</td>
<td>703.09</td>
<td>83.80</td>
<td>115.46</td>
<td>3.59</td>
</tr>
<tr>
<td>2</td>
<td>Countries</td>
<td>12</td>
<td>22</td>
<td>62</td>
<td>72</td>
<td>98</td>
<td>86</td>
</tr>
<tr>
<td></td>
<td>Increase in number of countries</td>
<td>-</td>
<td>10</td>
<td>40</td>
<td>10</td>
<td>26</td>
<td>-12</td>
</tr>
<tr>
<td></td>
<td>Percentage increase</td>
<td>-</td>
<td>83.33</td>
<td>181.82</td>
<td>16.13</td>
<td>36.11</td>
<td>-12.24</td>
</tr>
<tr>
<td>3</td>
<td>Document types</td>
<td>4</td>
<td>8</td>
<td>10</td>
<td>13</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>Increase in number of document types</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td>3</td>
<td>-3</td>
<td>-1</td>
</tr>
<tr>
<td></td>
<td>Percentage increase</td>
<td>-</td>
<td>100.00</td>
<td>25.00</td>
<td>30.00</td>
<td>-23.08</td>
<td>-10.00</td>
</tr>
<tr>
<td>4</td>
<td>Institutions</td>
<td>50</td>
<td>130</td>
<td>845</td>
<td>1421</td>
<td>2565</td>
<td>1359</td>
</tr>
<tr>
<td></td>
<td>Increase in number of institutions</td>
<td>-</td>
<td>80</td>
<td>715</td>
<td>576</td>
<td>1144</td>
<td>-1206</td>
</tr>
<tr>
<td></td>
<td>Percentage increase</td>
<td>-</td>
<td>160.00</td>
<td>550.00</td>
<td>68.17</td>
<td>80.51</td>
<td>-47.02</td>
</tr>
<tr>
<td>5</td>
<td>Language</td>
<td>2</td>
<td>5</td>
<td>7</td>
<td>10</td>
<td>14</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Increase in number of languages</td>
<td>-</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>-6</td>
</tr>
<tr>
<td></td>
<td>Percentage increase</td>
<td>-</td>
<td>150.00</td>
<td>40.00</td>
<td>42.86</td>
<td>40.00</td>
<td>-42.86</td>
</tr>
<tr>
<td>6</td>
<td>Sources</td>
<td>49</td>
<td>82</td>
<td>539</td>
<td>869</td>
<td>1402</td>
<td>771</td>
</tr>
<tr>
<td></td>
<td>Increase in number of sources</td>
<td>-</td>
<td>33</td>
<td>457</td>
<td>330</td>
<td>533</td>
<td>-631</td>
</tr>
<tr>
<td></td>
<td>Percentage increase</td>
<td>-</td>
<td>67.35</td>
<td>557.32</td>
<td>61.22</td>
<td>61.33</td>
<td>-45.01</td>
</tr>
<tr>
<td>7</td>
<td>Subject categories</td>
<td>37</td>
<td>58</td>
<td>156</td>
<td>171</td>
<td>198</td>
<td>174</td>
</tr>
<tr>
<td></td>
<td>Increase in number of subject categories</td>
<td>-</td>
<td>21</td>
<td>98</td>
<td>15</td>
<td>27</td>
<td>-24</td>
</tr>
<tr>
<td></td>
<td>Percentage increase</td>
<td>-</td>
<td>56.76</td>
<td>168.97</td>
<td>9.62</td>
<td>15.79</td>
<td>-12.12</td>
</tr>
</tbody>
</table>
What are the future prospects of Knowledge Management? An audit of the scholarly publications of KM and its related concepts

Table 4: Subject categories utilizing and contributing to KM research (N=9229)

<table>
<thead>
<tr>
<th>No.</th>
<th>Subject category</th>
<th>No. of records</th>
<th>%</th>
<th>No.</th>
<th>Subject Category</th>
<th>No. of records</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>COMPUTER SCIENCE, ARTIFICIAL INTELLIGENCE</td>
<td>1405</td>
<td>15.22%</td>
<td>31</td>
<td>PSYCHOLOGY, EDUCATIONAL</td>
<td>122</td>
<td>1.32%</td>
</tr>
<tr>
<td>2</td>
<td>MANAGEMENT</td>
<td>1370</td>
<td>14.84%</td>
<td>32</td>
<td>PSYCHOLOGY, APPLIED</td>
<td>121</td>
<td>1.31%</td>
</tr>
<tr>
<td>3</td>
<td>COMPUTER SCIENCE, INFORMATION SYSTEMS</td>
<td>950</td>
<td>10.29%</td>
<td>33</td>
<td>AUTOMATION &amp; CONTROL SYSTEMS</td>
<td>116</td>
<td>1.26%</td>
</tr>
<tr>
<td>4</td>
<td>COMPUTER SCIENCE, THEORY &amp; METHODS</td>
<td>752</td>
<td>8.15%</td>
<td>34</td>
<td>MATHEMATICS, APPLIED</td>
<td>112</td>
<td>1.21%</td>
</tr>
<tr>
<td>5</td>
<td>INFORMATION SCIENCE &amp; LIBRARY SCIENCE</td>
<td>728</td>
<td>7.89%</td>
<td>35</td>
<td>ANTHROPOLOGY</td>
<td>98</td>
<td>1.06%</td>
</tr>
<tr>
<td>6</td>
<td>OPERATIONS RESEARCH &amp; MANAGEMENT SCIENCE</td>
<td>716</td>
<td>7.76%</td>
<td>36</td>
<td>PUBLIC, ENVIRONMENTAL &amp; OCCUPATIONAL HEALTH</td>
<td>95</td>
<td>1.03%</td>
</tr>
<tr>
<td>7</td>
<td>BUSINESS ENGINEERING, ELECTRICAL &amp; ELECTRONIC</td>
<td>634</td>
<td>6.87%</td>
<td>37</td>
<td>MULTIDISCIPLINARY SCIENCES</td>
<td>94</td>
<td>1.02%</td>
</tr>
<tr>
<td>8</td>
<td>COMPUTER SCIENCE, INTERDISCIPLINARY APPLICATIONS</td>
<td>483</td>
<td>5.23%</td>
<td>38</td>
<td>ENGINEERING, CIVIL</td>
<td>84</td>
<td>0.91%</td>
</tr>
<tr>
<td>9</td>
<td>ENGINEERING, INDUSTRIAL EDUCATION &amp; EDUCATIONAL RESEARCH</td>
<td>451</td>
<td>4.89%</td>
<td>39</td>
<td>PSYCHOLOGY, DEVELOPMENTAL</td>
<td>83</td>
<td>0.90%</td>
</tr>
<tr>
<td>10</td>
<td>COMPUTER SCIENCE, MULTIDISCIPLINARY</td>
<td>370</td>
<td>4.01%</td>
<td>40</td>
<td>ECOLOGY</td>
<td>80</td>
<td>0.87%</td>
</tr>
<tr>
<td>11</td>
<td>ENGINEERING, MULTIDISCIPLINARY</td>
<td>346</td>
<td>3.75%</td>
<td>41</td>
<td>ENGINEERING, CHEMICAL</td>
<td>78</td>
<td>0.85%</td>
</tr>
<tr>
<td>12</td>
<td>EDUCATION &amp; EDUCATIONAL RESEARCH</td>
<td>285</td>
<td>3.09%</td>
<td>42</td>
<td>COMPUTER SCIENCE, HARDWARE &amp; ARCHITECTURE</td>
<td>70</td>
<td>0.76%</td>
</tr>
<tr>
<td>13</td>
<td>PSYCHOLOGY, EXPERIMENTAL</td>
<td>275</td>
<td>2.98%</td>
<td>43</td>
<td>EDUCATION, SCIENTIFIC DISCIPLINES</td>
<td>70</td>
<td>0.76%</td>
</tr>
<tr>
<td>14</td>
<td>COMPUTER SCIENCE, SOFTWARE</td>
<td>259</td>
<td>2.81%</td>
<td>44</td>
<td>HISTORY &amp; PHILOSOPHY OF SCIENCE</td>
<td>70</td>
<td>0.76%</td>
</tr>
<tr>
<td>15</td>
<td>ENGINEERING</td>
<td>258</td>
<td>2.80%</td>
<td>45</td>
<td>COMMUNICATION</td>
<td>65</td>
<td>0.70%</td>
</tr>
<tr>
<td>16</td>
<td>COMPUTER SCIENCE, CYBERNETICS</td>
<td>255</td>
<td>2.76%</td>
<td>46</td>
<td>STATISTICS &amp; PROBABILITY</td>
<td>64</td>
<td>0.69%</td>
</tr>
<tr>
<td>17</td>
<td>ENGINEERING, MANUFACTURING</td>
<td>216</td>
<td>2.34%</td>
<td>47</td>
<td>BEHAVIORAL SCIENCES</td>
<td>62</td>
<td>0.67%</td>
</tr>
<tr>
<td>18</td>
<td>PLANNING &amp; DEVELOPMENT</td>
<td>209</td>
<td>2.26%</td>
<td>48</td>
<td>TELECOMMUNICATIONS</td>
<td>61</td>
<td>0.66%</td>
</tr>
<tr>
<td>19</td>
<td>MEDICAL INFORMATICS</td>
<td>196</td>
<td>2.12%</td>
<td>49</td>
<td>ENGINEERING, BIOMEDICAL</td>
<td>59</td>
<td>0.64%</td>
</tr>
<tr>
<td>20</td>
<td>ERGONOMICS</td>
<td>183</td>
<td>1.98%</td>
<td>50</td>
<td>AGRICULTURE, MULTIDISCIPLINARY</td>
<td>56</td>
<td>0.61%</td>
</tr>
<tr>
<td>21</td>
<td>PSYCHOLOGY</td>
<td>175</td>
<td>1.90%</td>
<td>51</td>
<td>PHARMACOLOGY &amp; PHARMACY</td>
<td>56</td>
<td>0.61%</td>
</tr>
<tr>
<td>Rank</td>
<td>Field</td>
<td>Publications</td>
<td>2022 Impact Factor</td>
<td>2021 Impact Factor</td>
<td>2020 Impact Factor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------</td>
<td>--------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td>--------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>ENVIRONMENTAL STUDIES</td>
<td>171</td>
<td>1.85%</td>
<td>52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>NURSING</td>
<td>166</td>
<td>1.80%</td>
<td>53</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>ECONOMICS</td>
<td>165</td>
<td>1.79%</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>GEOGRAPHY</td>
<td>165</td>
<td>1.79%</td>
<td>55</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>ENVIRONMENTAL SCIENCES</td>
<td>162</td>
<td>1.76%</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>HEALTH CARE SCIENCES &amp; SERVICES</td>
<td>161</td>
<td>1.74%</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>SOCIAL SCIENCES, INTERDISCIPLINARY</td>
<td>158</td>
<td>1.71%</td>
<td>58</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>29</td>
<td>NEUROSCIENCES</td>
<td>152</td>
<td>1.65%</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td>SOCIOLOGY</td>
<td>134</td>
<td>1.45%</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SPORT SCIENCES</td>
<td>53</td>
<td></td>
<td></td>
<td>0.57%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CHEMISTRY, MULTIDISCIPLINARY</td>
<td>52</td>
<td></td>
<td></td>
<td>0.56%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PSYCHOLOGY, BIOLOGICAL</td>
<td>51</td>
<td></td>
<td></td>
<td>0.55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SOCIAL WORK</td>
<td>51</td>
<td></td>
<td></td>
<td>0.55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>WATER RESOURCES</td>
<td>49</td>
<td></td>
<td></td>
<td>0.53%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CONSTRUCTION &amp; BUILDING TECHNOLOGY</td>
<td>48</td>
<td></td>
<td></td>
<td>0.52%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ENGINEERING, MECHANICAL</td>
<td>47</td>
<td></td>
<td></td>
<td>0.51%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MEDICINE, GENERAL &amp; INTERNAL</td>
<td>47</td>
<td></td>
<td></td>
<td>0.51%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>APPLIED LINGUISTICS</td>
<td>45</td>
<td></td>
<td></td>
<td>0.49%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Subject categories
An analysis of the subject categories in KM literature and related concepts was meant to examine the most productive discipline or subject domain in terms of the number of publications. In this way, we could make inferences concerning the disciplines or subject domains that are utilizing and contributing to the theory development of KM. Table 4 reveals that “computer science, artificial intelligence” and “management” contributed the most literature, by producing a combined total of 2775 records. Of the total 9229 records, “computer science, information systems” contributed 950, followed by “computer science, theory and methods” (752, 8.15%); “Information Science & Library Science” (728, 7.89%); “Operations Research & Management Science” (716, 7.76%); “Business” (634, 6.87%); and “Engineering, Electrical & Electronic” (483, 5.23%).

4.5 Growth in the number of records vis-a-vis citations
The average number of citations per paper, which is sometimes used to measure the influence of an entity (i.e. author, institution, country, article/publication, or source (e.g. journal) was computed to examine the past and forecast the future influence of literature on KM and other subject domains. Table 5 and Figs 2 and 3 present the trends of productivity and impact between 1981 and 2007. Generally, Table 5 shows a continued increase in the number of publications and citations. Whereas the publications grew by 198.25% between 1981-1985 and 1986-1990, and by 585.35% between 1986-1990 and 1991-1995, the number of citations increased by 543.71% and 429.65%, respectively. There were drops in both cases in 2006-2007. The average number of citations showed a continued growth rate, except for 1991-1995 where a decline was recorded.

Table 5: Growth in the number of records and citations

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of records</td>
<td>57</td>
<td>170</td>
<td>1160</td>
<td>2230</td>
<td>4234</td>
<td>1378</td>
<td>9229</td>
</tr>
<tr>
<td>Change in no. of records</td>
<td>-</td>
<td>113</td>
<td>990</td>
<td>1070</td>
<td>2004</td>
<td>-2856</td>
<td>-</td>
</tr>
<tr>
<td>% change in no. of records</td>
<td>-</td>
<td>198.25</td>
<td>582.35</td>
<td>92.24</td>
<td>89.87</td>
<td>-67.45</td>
<td>-</td>
</tr>
<tr>
<td>Cumulative no. of records</td>
<td>57</td>
<td>227</td>
<td>1387</td>
<td>3617</td>
<td>7851</td>
<td>9229</td>
<td>-</td>
</tr>
<tr>
<td>Change in cumulative no of records</td>
<td>-</td>
<td>170</td>
<td>1160</td>
<td>2230</td>
<td>4234</td>
<td>1378</td>
<td>-</td>
</tr>
<tr>
<td>% change in cumulative of records</td>
<td>-</td>
<td>298.25</td>
<td>511.01</td>
<td>160.78</td>
<td>117.06</td>
<td>17.55</td>
<td>-</td>
</tr>
<tr>
<td>Mean no of records per year</td>
<td>11.40</td>
<td>34.00</td>
<td>232.00</td>
<td>446.00</td>
<td>846.80</td>
<td>918.67</td>
<td>341.81</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of citations</td>
<td>70</td>
<td>452</td>
<td>2394</td>
<td>9654</td>
<td>27595</td>
<td>14454</td>
<td>54619</td>
</tr>
<tr>
<td>Change in no. of citations</td>
<td>-</td>
<td>382</td>
<td>1942</td>
<td>7260</td>
<td>17941</td>
<td>-13141</td>
<td>-</td>
</tr>
<tr>
<td>% change in no. of citations</td>
<td>-</td>
<td>545.71</td>
<td>429.65</td>
<td>303.26</td>
<td>185.84</td>
<td>-47.62</td>
<td>-</td>
</tr>
<tr>
<td>Cumulative no. of citations</td>
<td>70</td>
<td>522</td>
<td>2916</td>
<td>12570</td>
<td>40165</td>
<td>54619</td>
<td>-</td>
</tr>
<tr>
<td>Change in cumulative no of citations</td>
<td>-</td>
<td>452</td>
<td>2394</td>
<td>9654</td>
<td>27595</td>
<td>14454</td>
<td>-</td>
</tr>
<tr>
<td>% change in cumulative no. of citations</td>
<td>-</td>
<td>645.71</td>
<td>458.62</td>
<td>331.07</td>
<td>219.53</td>
<td>35.99</td>
<td>-</td>
</tr>
<tr>
<td>Mean no. of citations per year</td>
<td>14.00</td>
<td>90.40</td>
<td>478.80</td>
<td>1930.80</td>
<td>5519.00</td>
<td>9636.00</td>
<td>2022.93</td>
</tr>
</tbody>
</table>

Figs 2 and 3 provide graphical representations of the patterns of growth shown in Table 5. They reveal that whereas the average number of papers per year grew linearly, the number of citations per year recorded an exponential growth pattern. Similarly, the number of papers linearly increased while that of the citations increased exponentially.

Fig 2: Trends of growth of papers, citations, papers per record and citations per paper; 1981 and 2007
Fig 3: Growth of publications and citations

4.6 Countries utilizing and contributing to theory and practice of KM and other subject domains

An analysis of the most productive countries between 1981 and 2007 was meant to provide an insight into the countries from which theories, practices and knowledge on knowledge management and related concepts originate. Table 6 shows that the lion’s share of publications originated from the USA (3179, 34.45%), followed by England (1101, 11.93%), Germany (695, 7.53%), Canada (625, 6.77%), Australia (341, 3.69%), France (330, 3.58%), Netherlands (301, 3.26%), China (275, 2.98%), Japan (258, 2.80%), and Italy (249, 2.70%).

Table 6: Productivity by country (N= 9229)

|-----|---------|-------|-------|-------|-------|-------|-------|-------|------------|

91
What are the future prospects of Knowledge Management? An audit of the scholarly publications of KM and its related concepts

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>USA</td>
<td>23</td>
<td>98</td>
<td>469</td>
<td>831</td>
<td>1306</td>
</tr>
<tr>
<td>2</td>
<td>ENGLAND</td>
<td>4</td>
<td>12</td>
<td>91</td>
<td>241</td>
<td>532</td>
</tr>
<tr>
<td>3</td>
<td>GERMANY</td>
<td>5</td>
<td>84</td>
<td>151</td>
<td>331</td>
<td>124</td>
</tr>
<tr>
<td>4</td>
<td>CANADA</td>
<td>1</td>
<td>8</td>
<td>106</td>
<td>135</td>
<td>256</td>
</tr>
<tr>
<td>5</td>
<td>AUSTRALIA</td>
<td>29</td>
<td>80</td>
<td>176</td>
<td>56</td>
<td>341</td>
</tr>
<tr>
<td>6</td>
<td>FRANCE</td>
<td>1</td>
<td>3</td>
<td>57</td>
<td>86</td>
<td>141</td>
</tr>
<tr>
<td>7</td>
<td>NETHERLANDS</td>
<td>1</td>
<td>5</td>
<td>39</td>
<td>87</td>
<td>123</td>
</tr>
<tr>
<td>8</td>
<td>CHINA</td>
<td>6</td>
<td>23</td>
<td>167</td>
<td>79</td>
<td>275</td>
</tr>
<tr>
<td>9</td>
<td>JAPAN</td>
<td>57</td>
<td>68</td>
<td>91</td>
<td>42</td>
<td>258</td>
</tr>
<tr>
<td>10</td>
<td>ITALY</td>
<td>2</td>
<td>24</td>
<td>44</td>
<td>133</td>
<td>46</td>
</tr>
<tr>
<td>11</td>
<td>TAIWAN</td>
<td>1</td>
<td>13</td>
<td>45</td>
<td>111</td>
<td>72</td>
</tr>
<tr>
<td>12</td>
<td>SPAIN</td>
<td>1</td>
<td>13</td>
<td>35</td>
<td>123</td>
<td>59</td>
</tr>
<tr>
<td>13</td>
<td>AUSTRIA</td>
<td>8</td>
<td>23</td>
<td>89</td>
<td>22</td>
<td>142</td>
</tr>
<tr>
<td>14</td>
<td>SWEDEN</td>
<td>1</td>
<td>24</td>
<td>28</td>
<td>73</td>
<td>16</td>
</tr>
<tr>
<td>15</td>
<td>SCOTLAND</td>
<td>1</td>
<td>16</td>
<td>27</td>
<td>79</td>
<td>18</td>
</tr>
<tr>
<td>16</td>
<td>SOUTH KOREA</td>
<td>6</td>
<td>23</td>
<td>67</td>
<td>40</td>
<td>136</td>
</tr>
<tr>
<td>17</td>
<td>SWITZERLAND</td>
<td>3</td>
<td>11</td>
<td>25</td>
<td>62</td>
<td>23</td>
</tr>
<tr>
<td>18</td>
<td>FINLAND</td>
<td>12</td>
<td>22</td>
<td>63</td>
<td>19</td>
<td>116</td>
</tr>
<tr>
<td>19</td>
<td>SINGAPORE</td>
<td>1</td>
<td>14</td>
<td>16</td>
<td>56</td>
<td>23</td>
</tr>
<tr>
<td>20</td>
<td>BRAZIL</td>
<td>1</td>
<td>4</td>
<td>11</td>
<td>65</td>
<td>25</td>
</tr>
<tr>
<td>21</td>
<td>BELGIUM</td>
<td>16</td>
<td>29</td>
<td>35</td>
<td>24</td>
<td>104</td>
</tr>
<tr>
<td>22</td>
<td>INDIA</td>
<td>1</td>
<td>11</td>
<td>30</td>
<td>47</td>
<td>13</td>
</tr>
<tr>
<td>23</td>
<td>SOUTH AFRICA</td>
<td>1</td>
<td>6</td>
<td>14</td>
<td>50</td>
<td>22</td>
</tr>
<tr>
<td>24</td>
<td>GREECE</td>
<td>1</td>
<td>9</td>
<td>13</td>
<td>45</td>
<td>22</td>
</tr>
<tr>
<td>25</td>
<td>NEW ZEALAND</td>
<td>3</td>
<td>18</td>
<td>47</td>
<td>19</td>
<td>87</td>
</tr>
<tr>
<td>26</td>
<td>NORWAY</td>
<td>1</td>
<td>8</td>
<td>16</td>
<td>43</td>
<td>13</td>
</tr>
<tr>
<td>27</td>
<td>DENMARK</td>
<td>5</td>
<td>14</td>
<td>44</td>
<td>15</td>
<td>78</td>
</tr>
<tr>
<td>28</td>
<td>ISRAEL</td>
<td>1</td>
<td>1</td>
<td>9</td>
<td>23</td>
<td>28</td>
</tr>
<tr>
<td>29</td>
<td>POLAND</td>
<td>1</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>29</td>
</tr>
<tr>
<td>30</td>
<td>MEXICO</td>
<td>3</td>
<td>13</td>
<td>24</td>
<td>13</td>
<td>53</td>
</tr>
</tbody>
</table>

5. Discussion, conclusions and recommendations

Although KM is a relatively new concept – having been born in the mid-1990s (Jacobs, 2004:212) – results have shown that knowledge and KM practices have always existed, although not as much as they are known and applied today. For instance, Plato defined knowledge as “justified true belief”38. Today, most scholars have faulted this definition and attempted to offer different perspectives on what knowledge means. Information professionals see knowledge as internalized information, as reflected in the DIKW model – Data, Information, Knowledge and Wisdom. Some of the knowledge management practices that have existed for decades include knowledge transfer and knowledge acquisition. According to the Wikipedia online encyclopedia:39

One aspect of knowledge management, knowledge transfer, has always existed in one form or another. Examples include on-the-job peer discussions, formal apprenticeship, corporate libraries, professional training and mentoring programs. However, with computers becoming more widespread in the second half of the 20th century, specific adaptations of technology such as knowledge bases, expert systems, and knowledge repositories have been introduced to further simplify the process.

38 “In Plato's Theaetetus, Socrates and Theaetetus discuss three definitions of knowledge: knowledge as nothing but perception, knowledge as true judgment, and, finally, knowledge as a true judgment with an account” – http://en.wikipedia.org/wiki/Knowledge (Accessed 5 September 2007)
This revelation is supported by the findings of this study, which show that among the concepts appearing in the literature published in the early 1980s were knowledge acquisition, knowledge transfer, tacit knowledge, explicit/implicit knowledge, indigenous knowledge, knowledge creation, knowledge development, intellectual capital and corporate knowledge.

Fig 1 shows that all KM-related concepts (e.g. processes and types of knowledge) have shown an exponential trend in growth. KM has the highest rate of growth, implying an increased amount of interest from various scholars, as reflected by the different subject categories. We must note, however, that records on KM include those of knowledge management system(s), which is said to have evolved in the early 1970s in the United States of America (http://www.ultradevguru.com/ver2_hypertext/kms.htm). This therefore implies that the early use of knowledge management, as reflected in the literature, refers to knowledge management systems, defined as systems (largely IT-based) for managing knowledge in organizations, and supporting the creation, capture, storage and dissemination of information. The rapid increase in the number of publications for each concept may imply a growth of knowledge in the respective subject domains. In addition, the growth in the number of authors (researchers), countries, document types, institutions, languages, sources and subject categories can be attributed to the interest KM has generated in several disciplines. It has also been observed that knowledge management is a multi-disciplinary subject, in which case one would expect an increased interest from a variety of researchers who are affiliated to different institutions and countries. The rapid growth rate of the literature is likely to persist for a long time, especially as we transit from an information age to the knowledge society. It is worth noting, however, that the growth in the amount of literature and citations alone can not reliably inform us about the future prospects of a new subject. Further studies need to be conducted (using expert opinions, surveys, etc) to validate the results generated from informetric studies. Nevertheless, previous studies have shown that informetric studies provide substantive information that can be used to determine the trend of a subject (e.g. hot topics, etc) (see http://in-cites.com/).

An analysis of the subject categories reveals that computer science, management, library and information science, business, and electrical & electronic engineering, are major contributors and utilizers of knowledge and knowledge management theories and practices. Similar findings were reported by Jacobs (2004) and Onyancha & Ocholla (2006). Seemingly, this pattern will continue until such time that ‘knowledge management’, or an alternative subject category to describe knowledge - and knowledge management-specific literature - is introduced by ISI. Presently, there is no subject category in ISI’s list of subject categories that specifically describes knowledge or knowledge management literature.

On average, a comparison of the number of papers and citations reveals that the latter has continued to increase exponentially, while the former can be said to follow a linear trend of growth. This, in our view, is characteristic of a newly introduced subject or discipline. We generally feel that authors would tend to heavily cite the few papers that have been published in a new domain. Simply put, the number of researchers outweighs the number of sources that specifically deal with this area of research, and therefore it is likely that most (if not all) researchers will use the same sources of information in their reviews and citations. This trend is likely to continue because KM is still at its early stages of development.

Another aspect that was considered in this study was the countries that are the most productive. Results indicate that Europe and the Americas are and will remain the most productive countries. Table 6 shows that most of the publications originated from the USA, England, Germany, Canada, Australia, France, and the Netherlands. Asia put up a good show, with China, Japan and Taiwan taking positions 8, 9 and 11, respectively. The implication of this pattern of productivity is that these countries have and will continue to influence the direction of KM research. KM theories will continue to originate from the
West and partly the East. Africa and the other continents will have little impact in influencing research, theory development and even the curriculum of KM.

In conclusion, we note that KM has increasingly become a household term and a vital activity, particularly in business circles. It is fast moving from being a concept, to a course within a variety of disciplines, to a discipline in its own right. KM research, in keeping with most newly introduced subject domains, has shown a tremendous amount of growth in literature and impact. Although KM is young, it has shown signs of growing even stronger. Exactly how long it will sustain its current growth rate may be difficult to predict. But, going by its exemplary performance over such a short period of time, we can safely assume that KM will remain a ‘hot’ topic in research and study, particularly in the knowledge society.

References


Vanston, J. (2003). Better forecasts, better plans, better results: enhance the validity and credibility of your forecasts by structuring them in accordance with the five different ways people view the future. Research Technology Management, 47-58
A comparison of research and publication pattern and output among academic librarians in Kenya and South Africa from 1990 to 2005.

Grace C.Sitienei 40* (graceterer@yahoo.com)
Department of Library and Information Science
University of Zululand
South Africa

1. Introduction and background information

Leedy in Aina (2002:1) defines research “as the manner in which we attempt to solve problems in a systematic effort to push the frontiers of human ignorance or confirm the validity of the solutions to problems others have presumably solved.”

The DEST HERDC Specification for the collection of 2006 data (DEST HERDC, 2006, para.1.3.10) defines research publications as books, book chapters, journal articles and/or conference publications which meet the definition of research and are characterized by:

- Substantial scholarly activity, as evidenced by the discussion of the relevant literature, an awareness of the history and antecedents of the work described, and provided in a format that allows a readers to trace the sources of the work, (e.g. including through citations and footnotes).
- Originality (i.e. not a compilation of existing works)
- Veracity/validity through a peer review validation process or by satisfying the commercial publisher processes.
- Increasing the stock of knowledge.
- Being in a form that enables the dissemination of knowledge.
- Increasing the disseminative opportunities of produced information.
- Enhancing sustainable access to the produced research information.
- Ensuring the provision of training and skills sharing in order that would enhance editing, publishing, production and distribution skills.
- Ensuring the improvement in the quality of publications.

The Royal society of New Zealand (RSNZ, n.d.para.1) website states that research publications

- Maintain scientific self respect
- Complete the scientific process
- Are a clear measure of productivity
- Promote a scientific sense of community
- Preserve knowledge
- Represent a time investment

---

40 Grace Sitienei is a masters student in the Department of Library and Information Science, University of Zululand, South Africa
2. Problem statements

Gregory and Medford (2006, par. 6) observes that there are a number of reasons why academic librarians should consider publishing as part of their work. Among these is that publication leads to certain professional advantages, such as promotion, being invited to speak, hearing more about the profession, the creation of new ideas, and also gaining an understanding of the research process.

Librarians have always been considered custodians of information and publishing or the creation of information has not been part of their work. Furthermore: publishing has not been considered a requirement for promotion and tenure in their field as librarians. In some institutions librarians are required to publish, yet in others they are not. Since academic librarians publishing output is not uniform and therefore, there is no uniformity in the requirement for publishing. Not much is known about the nature and patterns of publication of academic librarians in Kenya and South Africa.

The aim of the study was to compare the publication pattern and output of academic librarians in selected public university libraries in Kenya and South Africa between 1990 to 2005. The aim was achieved through the following objectives:

- To examine what academic librarians publish
- To establish why academic librarians publish
- To study the publishing trend of academic librarians
- To determine where academic librarians publish
- To determine the level of collaboration
- To establish the quantity of publishing

3. Definition, roles, objectives and purpose of academic libraries

Prytherch (2000:3) defines academic libraries as libraries in educational establishments at any level, i.e. universities, colleges, research associations, etc. The term is less associated with school libraries, Harrison and Beenham (1980:4) provide a slightly different definition by suggesting that academic libraries range from the largest to small university libraries (some of which are virtually national libraries in that they obtain materials free of charge under the Copyright Act). The two authors notes that the library collection usually reflects the courses offered and the research undertaken within the institutions and may sometimes be less universal collection in public libraries in terms of subject coverage. The objectives of these libraries are to:

- Serve the needs of the academic community (staff and students)
- Provide study areas for users
- Provide a lending service appropriate to the different types of users
- Provide an active information service (and this may extent beyond the institution to local industry and commerce)

Peters (1999:27) observes that academic libraries documents and cater for advancement in the educational and research disciplines of the greatest interest to an institution by:

- Providing a freely available, readily accessible, contributions to the advancement of ideas and knowledge
- Facilitating promotion and tenure, research funding, and professional opportunities which are closely linked to an individual’s publication record, and balanced copyright laws for which librarians have lobbied long and hard, in order to encourage protection of publications, while, allowing educational use.
Being repositories of ideas which provide a durable true base upon which subsequent generation of scholars can build in the form of knowledge or technology which opens new possibilities of discovery or insight.

Guaranteeing the survival of knowledge beyond one generation by:

- Providing a shared collection which is difficult to destroy this knowledge survival ensures that a culture has roots and spares a society the cost and effort of recreating techniques and reinventing technology.

- Contributing towards the culture of intellectual pursuit by providing a locus for research, new ideas, and sponsorship for lectures, or host of exhibits and exhibitions.

The American Library Association (1980:1) identifies the purpose, goals and objectives of academic libraries as the following:

- They reflect the development of the colleges and universities of which they are part
- They design their collections and services to meet the instructional programs of the particular institutions
- The library plays a role of central and critical importance in the instructional and scholarly life of the college or university
- They design formal and informal arrangements for the sharing of resources
- They offer to those who may be said to constitute the library’s primary clientele - the faculty, students and academic staff of the college or university - a collection of broad scope and depth, and specialized in depth assistance in the use of the library’s resources
- They seek to attain a level of self-sufficiency that is essential for the health and vigor of the university and its academic programs

- They also make available to their clientele, through various co-operative programs, the resources and collections of other libraries

Peter (1999:27) identifies the role of academic librarians as:
- A person responsible for managing and leveraging the institutional resources that are devoted to educational and research support.
- An individual who ensures that information will be available to students and the faculty on an equal basis, regardless of the individual or departments’ wealth, by reducing unnecessary duplication, and facilitating inter-library-loans which enable access to other libraries on a no- or- low cost basis.
- They contribute to the timeliness and quality of scholarship by making it possible to locate and use information, wherever it may be.

According to Veaner (1990:63), an academic librarian makes a unique and vital contribution to higher education by:
- Bearing responsibility for developing college and university library collections, and for instructing students (both formally in the classroom and informally in the library)
- Advising the faculty and scholars on how to use library collections
- Providing a variety of information services to the college or university community, ranging from answers to specific questions, to the compilation of extensive bibliographies
- Providing library and information services to the community at large
- Through his/her own research into the information process, and through bibliographies and other studies, he/she adds to the sum of knowledge in the field of
library practice and information science. Through membership and participation in
library and scholarly organizations, he/she works to improve the practice of academic
librarianship, bibliography and information work
• Performing a teaching and research role by advising and assisting faculties in their
scholarly pursuits
• Involving themselves in research functions - many conduct research in their own
professional interest and when not on duty
Veaner (1999:64) observes that in 1988, the Canadian Library Association ((CLA)/Canadian
Association of College and University Libraries (CACUL)) stated the role of academic librarians as:
• Contributors to the pursuit, dissemination, and structuring of knowledge and
understanding.
• Individuals that deal with a wide and varied clientele, whose needs, age range and
literacy skills vary considerably.
• Contributors to the instructional and research functions of their institution when
exercising their professional knowledge/or their competence in subject disciplines
• They function as facilitators, instructors and communicators in making and
combining library services with teaching and/or research programs and priorities.
• Developers and evaluators of resource collections: the provision of subject specialized
reference services: the acquisition, bibliographic control, storage and preservation of
library collections: the development and implementation of a variety of library
systems: and the provision of instruction in the exploitation of in-house resources,
etc.
• Play the role of administrators, scholars, teachers, bibliographic experts or a
combination of all these.
• Upholding intellectual freedom by pursuing independent education and self-
development activities, by undertaking research in library science or other
disciplines, and by participating in college, university and professional associations.
• A professional who has selected the life of an informative assistant as a career. He/she is a creative partner to the faculty, researchers and students
• Contributors to a university’s intellectual framework by extending their information
and organizational skills to all levels of the academic community.
• They create, build, maintain, manage and improve the information infrastructure
that makes it possible to conduct effective teaching, learning and research.
• Contributors to the formation of their own goals and objectives within the constraints
of the university or college mission’s goals and objectives, and within the context of
the library program determined by campus administration and head librarians.
Veaner (1990:63) concludes by arguing that without academic librarians, the quality of
teaching, research and public service in our universities would deteriorate, and this would
make it impossible for programs in many disciplines to be performed.
Librarians are required to divert their energies from their daily duties in order to meet
research expectations. Many librarians would find it unthinkable to be required to perform
day-to-day duties while also doing research and meeting service expectations (n.d. Mitchell
and Reichel, Publish or perish: a dilemma for Academic Librarians) Librarian. According to
Medford and J. (2006, para.6), publication is necessary:
• To maintain the faculty status of the profession or for an individual to achieve tenure
or promotion.
• To add to the body of knowledge that goes into creating our professional literature.
Marjorie (2000, para.5) further points out that publication:
• Is competitive
• Provides a professional advantage - the more you publish the more you are invited to
speak and hear, and thereby get more ideas for publications.

99
• Allows us to keep score. The results go on our resume. The cultural norm of an academic institution is how much you have been published in peer reviewed journals.
• Enables us to leave our ideas behind for others to appreciate.

The Library Connect website (2003) states that reasons for publishing include:
• Contributing towards the profession
• Gaining a better understanding of the research process, thus enabling librarians to assist researchers, and discover new knowledge.
• Writing or research is a challenge and a satisfaction.

4. Research methodology

Goddard and Melville (2001:16) define the research method as a means of specifying how one can go about finding a solution(s) to problems, and what steps are necessary to do so. In this study, bibliometrics was the research method used to analyze the research publications of academic librarians. Twining in Onyancha (2002:70) states that bibliometrics is a method that utilizes quantitative analysis and statistics to investigate, among other aspects of information, patterns of the data-information-knowledge transfer process. It is based on the enumeration of scientific data in the form of articles, publications, patents, and citations. The use of bibliometrics ranges from determining the level and nature of collaboration between scientists and disciplines, to examining cognitive (i.e., human, machine, and neural networks) development. According to Turnbull and Ungern-Sternberg in Onyancha (2002:70), bibliometrics consists of several specific research methodologies, which include citation counts and analysis, bibliometric coupling, co-word analysis, and webometrics. Ikpaahindi (1985:170) observes that three main laws are applied to bibliometrics:
• Brandford’s law - which describes how literature on subjects is distributed in journals.
• Lottka’s law - suggests that only a few authors are productive and account for a relatively large percentage of the publications in any given field.
• Zipf’s laws - people find it easier to choose and use familiar as opposed to unfamiliar words, and therefore the probability of the occurrence of familiar words is higher.

The importance of bibliometrics in this decade is evident because of the growing amount of research conducted on bibliometrics. The purpose of bibliometrics is as follows:
• Hjorland in Pritchard (2006, Bibliometrics, para.2), states that bibliometrics sheds light on the process of written communications and on the nature and course of a discipline (in so far as this is displayed through written communication) by means of counting and analyzing the various facets of written communication.
• Bibliometrics analyses the popularity and impact of specific publications and examines their citations to referring documents (n.d, Ill.1Bibliometrics (Scientific publications and their citations), para.1).
• It’s a tool for assessing the quality of R & D output (n.d, Ill.1Bibliometrics (Scientific publications and their citations), para.1).
• It describes patterns of publications within a given field or body of literature (Wyllys 2003,Bibliometrics and Cybermetrics Section, para.2)
• Researchers may use bibliometric methods of evaluation to determine the influence of a single writer, for example, or to describe the relationship between two or more writers or works (n.d, Bibliometric, para.1)
• Bibliometrics is used to trace relationships between academic journal citations. Citation analysis, which involves examining an item’s referring documents, is used when searching for materials and analyzing their merit (2006, Wikipedia, para.1).
• Data from citation indexes can be analyzed to determine the popularity and impact of specific articles, authors, and publications. Using citation analysis to gauge the importance of one’s work, for example, is a significant part of the tenure review process (2006, Wikipedia, para.3).
Information scientists also use citation analysis to quantitatively assess the core journal titles and watershed publications in particular disciplines: interrelationships between authors from different institutions and schools of thought: and related data about the sociology of academia (2006, Wikipedia, para.3).

Bibliometric analysis can be used to make visible research co-operation, thematic relations, and centres of excellence, and can also be used to detect errors in peer evaluation (Botte 2006, Central element s of bibliometric analysis Section, Para.8)

It is used in the quantitative analysis of science and technology performance (n.d., Bibliometric Citation analysis, p.1).

It is also used in the quantitative analysis of the cognitive and organizational structure of science and technology (n.d., Bibliometric Citation analysis, p.1).

Bibliometrics allows one to investigate how certain aspects of science or technology have evolved over a certain period of time (n.d., Bibliometric Citation analysis, p.1).

The method is adequate to use in the evaluation of the collections of libraries (Rios 2000, Five cases as evidence of the application of bibliometrics techniques section, para.3)

The librarian may use these techniques as an instrument to solve problems related to the budget reduction of libraries, and he/she may then be able to make decisions (Rios 2000, Five cases as evidence of the application of bibliometrics techniques section, para.3).

Bibliometrics is used to identify national and international networks, and map the development of new (multi-disciplinary) fields of science and technology(OECD 2003,para.2)

Another major area of bibliometrics research uses various methods of citation analysis in order to establish relationships between authors or their work. (Notes: definitions were not supplied. Repetition) When one author cites another author, a relationship is established. Citation analysis uses citations in scholarly works to establish links. Many different links can be ascertained, such as links between authors, between scholarly works, between journals, between fields, or even between countries (n.d, Bibliometrics: Citation analysis Section ,para.1)

With the discovery of World Wide Web, such techniques may also be used to map out (called "scientific mapping" in traditional bibliometrics research) areas of the web that appear to be most useful or influential, based on the number of times they are hyperlinked to other websites (n.d, Bibliometrics: web application of bibliometrics Section, para.1).

The usefulness of bibliometrics continues to grow, in keeping with continued research in science and technology. Bibliometrics will, for a long time, be a useful tool for assessing published documents in all fields of science.

4.1 Scope of the study

The study was a comparison of the research and publication patterns and output of academic librarians in Kenya and South Africa from 1990 to 2005.

4.2 Pilot study

This study was a pilot study that precedes a comprehensive study that will be carried out to compare the research and publication patterns and output of academic librarians in Eastern and Southern Africa from 1990 to 2006.
4.3 Targeted population

Melville and Goddard (2001:34) define a population as any group that is the subject of research interest. Hence, this research targeted all academic librarians that were holding a bachelors degree and above, and who, at the time of the research, were working in three university libraries in Kenya, and four public universities in South Africa.

4.4 Sampling

Bless and Higson-Smith (2000:84) state that sampling means leaving certainty in favor of probability. The advantages of sampling are as follows:

- Collecting data from a sample does not consume time
- It is less costly
- Sampling is the only logical way to collect data
- It is the only way to collect data when the population is large, or when it would otherwise be impossible to gather data.

Bless and Higson-Smith (2000:84) note that there several methods available for sampling and that each of these methods have limitations that stem from sampling. The two authors further observe that sampling can be divided into two categories, i.e. probability sampling and non-probability sampling. For the purpose of this study, non-probability sampling was used in order to achieve adequate representation. Under non-probability sampling, the purposive sampling technique was selected.

4.5 Sample frame and sample size

Neuman (2006:201) argues that a researcher ‘operationalizes’ a population by developing a specific list that closely approximates all the elements within the population. This list is the sampling frame. According to Delvin (2006:56), the sample size will be drawn from this frame. The sample size constitutes making a judgment about the number of participants needed to carry out the research. Therefore, although there are twenty-three public universities in South Africa (Wikipedia 2007, Current official South African Universities Section, par.2), only the following four were selected purposively for this study:

- University of Kwa-Zulu Natal
- University of Zululand
- Durban University of Technology
- Mangosuthu Technikon

In Kenya there are seven public universities (Wikipedia 2007, Current official Kenyan Universities section, par.2). However, only the following three were selected purposively for this study.

- Nairobi University
- Moi University
- Masinde Muliro University of Science and Technology

The sample size consisted of all the academic librarians that were working in these universities and holding Bachelors, Masters or Doctorate degree.
4.6 Research Instruments

The following instruments were used in order to carry out the research:

- Databases

The following two databases were used to retrieve data:

Ebscohost - this is a gateway (interface) to numerous online databases. The database selected from this host database was the Library and Information Science and Technology Abstract (LISTA).

LISTA - provides full text journal articles and an index of books, research reports and conference proceedings. Subjects covered are librarianship, classification, cataloguing, bibliometrics, online information retrieval, information management, search engines, printed and electronic information sources, the information industry, scholarly communication, and electronic publishing. LISTA with full text coverage extends back to the mid 1960s.

First search - this database has a collection of over sixty databases covering various subjects. Each Firstsearch database can be searched separately. Examples include Dissertation abstracts, Book in print, WorldCat, WilsonSelect, Article first, and many more (2003, New Mexico State University). For this research, data was obtained from the following two Firstsearch databases:

WorldCat - This is a worldwide library catalogue. The database describes over 41 million books and other material (videocassettes, CDs, etc) in libraries worldwide (2007, Karl E. Mundt Literary and Learning Commons World) (LISTA) (2007, Google).

Internet

Lojkine (2003:9) defines the Internet as a computer network that spans the globe. It consists of millions of computers that are physically connected using wires, cables and satellite connections that enable information to pass from one computer to the next. Lojkine (2003:10) asserts that the Internet provides a number of services, one of which is the World Wide Web (WWW), which consists of millions of magazine-styled pages, packed with text, pictures, sound, animations and video clips.

- The Internet was consulted widely and proper references provided in cases where it was deemed necessary to quote from a website
- Databases and university websites were accessed through the Internet

4.7 Data collection procedure

There are numerous methods available for data collection. Examples include administering questionnaires, interviewing individuals, and observation. This research did not use any of these methods, and instead relied on the Internet to access the required data. The following procedure was used in order to collect data:

- Choice of Database

The following two databases were used to access data:

- LISTA
- **WORLDCAT**
  LISTA was selected because its covers subjects in library and information science only. WORLDCAT covers all the research publications found in libraries all over the world.

  - **Identification of Universities**
    It was necessary to establish how many public universities exist in both Kenya and South Africa, since academic librarians’ names were to be identified from these particular universities. The Internet proved helpful at this stage, as it provided a list of these institutions.

  - **Identification of academic librarians’ names**
    The main aim of this research was to establish whether academic librarians in public universities in South Africa and Kenya publish or carry out research. In order to achieve this, it was necessary to have the names of all the academic librarians holding a bachelors degree or above. The Internet again proved useful. The websites of each university provided the names of these librarians. The names were retrieved from university web pages that were entitled *Staff directory or contact address.*

  - **Creation of a master list**
    A master list with the following fields was then created:
    - Author
    - Title of document
    - Year of publication
    - Subject of document
    - Type of document
    - Journal
    - Collaboration
    - Affiliation
    - Number of documents

  - **Downloading of data**
    The following procedure was then used to download data for this particular study.

  - **Database**
    The LISTA and WORLDCAT databases were used to retrieve data. LISTA is accessible through its host database Ebscohost on the internet. The WORLDCAT database is accessible via the University of Zululand library webpage, through the FIRSTSEARCH host database. To access it, a password and a user ID is required.

  - **Keywords used**
    The full name of each academic librarian was used as a keyword to search all three databases for any publication that may have been published by the said academic librarian.

    - **The following last steps were then followed**
      The data retrieved was recorded in a spreadsheet.

  - **Data analysis**
    Bless and Higson-Smith (2000:137) argue that the process of data analysis takes different forms depending on the nature of the data. Quantitative data is often analysed using a range of descriptive and inferential statistical procedures. Data analysed was presented in charts and tables created using Microsoft Excel.
5. Results

The results are represented in sub-sections 5.1. to 5.7 below.

5.1 Distribution of documents by year of publication from 1990 to 2005

LISTA recorded a total of 14 publications. Of these, 11 (79%) were published by Kenyan authors and 3 (21%) by South African authors. Fig.1 below illustrates the distribution of documents by year of publication from 1990 to 2005. The chart indicates that the number of publications in LISTA (Kenya) was stable for 3 years from 1990 to 1992, 1 (7.1%), dropped to 0% in 1993, and rose again in 1994 to 1 (7.1%). It remained at this point until 1995, and then rose again in 1996 to 2 (14.5%), where it remained in 1997. It dropped again dramatically in 1998 to 0 (0%), where it remained until 2002, then rose once again to 1 (7.1%) in 2003, dropped to 0 (0%) in 2004. In LISTA (South Africa), there were no publications in 1990, but in 1991 there was 1 (7.1%) and thereafter 0 (0%) publications from 1992 to 2001. In 2002 and 2004 there was 1 (7.1) recorded publication, but none in the following year (See fig. 1).
5.2 Distribution of documents by geographical region

Fig 2 illustrates the distribution of documents by geographical region. The chart indicates that in LISTA, Kenya published 78.6% and South Africa 21.4%. WORLDCAT indicates that Kenya published 76.2% and South Africa 28.8%.

5.3 Distribution of documents by universities

Fig 3 indicates that in the LISTA database, Moi University academic librarians published 9 (64.2%) and Nairobi published 2 (14.2%), while Masinde Muliro University of Science and Technology did not publish anything. South African academic librarians from the Zululand Library published 2 (14.2%), KwaZulu Natal published 1 (7.4%), and Mangosuthu and Durban University of Technology had no publications.

The WORLDCAT database shows that Moi University academic librarians published 15 (71%), Nairobi University 1(5%) and Masinde Muliro University of Science and Technology 0 (0%). South African academic librarians from the Zululand University published 1 (5%), KwaZulu Natal published 4 (19%) of the publications, and Mangosuthu and Durban University published 0 (0%).
5.4 Distribution of publications by nature of authorship

Table 1 shows that there were a total of 14 articles in the LISTA Database. Kenyan academic librarians authored 11 (89%) of the articles. 3 (27%) of the articles were co-authored, and 7 (63%) were single authored articles. South Africa produced 3 (11%) articles. 2 (67%) of the articles were jointly written and 1 (33%) was single authored.

Table 2 indicates that there were a total of 21 articles published in the WORLDCAT database. Of these, 16 were authored by Kenyan academic librarians. 6 (38%) were jointly written and 10 (62%) were single authored. (Notes: 16? Revise) South Africa had 5 articles produced by 3 authors. 2 (20%) were jointly written, while 4 (80%) were single authored articles.

**TABLE: 1. NATURE OF AUTHORSHIP IN KENYA AND SOUTH AFRICA**

**N=14**

**LISTA (KENYA)**

**N=11**

<table>
<thead>
<tr>
<th>AUTHORS</th>
<th>NO. OF ARTICLES</th>
<th>%</th>
<th>CO-AUTHORSHIP</th>
<th>%</th>
<th>SINGLE AUTHORSHIP</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>11</td>
<td>89%</td>
<td>3</td>
<td>27%</td>
<td>7</td>
</tr>
</tbody>
</table>

**LISTA (SOUTH AFRICA)**
### N=3

<table>
<thead>
<tr>
<th>AUTHORS</th>
<th>NO OF ARTICLES</th>
<th>%</th>
<th>CO-AUTHORSHIP</th>
<th>%</th>
<th>SINGLE AUTHORSHIP</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>3</td>
<td>11%</td>
<td>2</td>
<td>67%</td>
<td>1</td>
<td>33%</td>
</tr>
</tbody>
</table>

**TABLE: 2. NATURE OF AUTHORSHIP IN KENYA AND SOUTH AFRICA**

N=21

**WORLDCAT (KENYA)**

N=16

<table>
<thead>
<tr>
<th>AUTHORS</th>
<th>NO OF ARTICLES</th>
<th>%</th>
<th>CO-AUTHORSHIP</th>
<th>%</th>
<th>SINGLE AUTHORSHIP</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>16</td>
<td>76%</td>
<td>6</td>
<td>38%</td>
<td>10</td>
<td>62%</td>
</tr>
</tbody>
</table>

**WORLDCAT (SOUTH AFRICA)**

N=5

<table>
<thead>
<tr>
<th>AUTHORS</th>
<th>NO. OF ARTICLES</th>
<th>%</th>
<th>CO-AUTHORSHIP</th>
<th>%</th>
<th>SINGLE AUTHORSHIP</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>5</td>
<td>24%</td>
<td>1</td>
<td>20%</td>
<td>4</td>
<td>80%</td>
</tr>
</tbody>
</table>
Table 3: AUTHORS WHO PUBLISHED MORE THAN ONE ARTICLE

<table>
<thead>
<tr>
<th>No.</th>
<th>NAME OF AUTHOR</th>
<th>COUNTRY</th>
<th>AFFILIATION</th>
<th>NO. OF ARTICLES</th>
<th>DATABASE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tanui arap Tirong</td>
<td>Kenya</td>
<td>Moi university</td>
<td>7</td>
<td>LISTA/WORLDCAT</td>
</tr>
<tr>
<td>2</td>
<td>Shibanda, G.G.</td>
<td>Kenya</td>
<td>Moi university</td>
<td>7</td>
<td>LISTA/WORLDCAT</td>
</tr>
<tr>
<td>3</td>
<td>Dubbled Catherine E.</td>
<td>S.Africa</td>
<td>Kwa Zulu Natal</td>
<td>3</td>
<td>LISTA/WORLDCAT</td>
</tr>
<tr>
<td>4</td>
<td>Khamadi, S.I.D</td>
<td>Kenya</td>
<td>Moi University</td>
<td>2</td>
<td>LISTA/WORLDCAT</td>
</tr>
<tr>
<td>5</td>
<td>Inoti, V.I</td>
<td>Kenya</td>
<td>Nairobi University</td>
<td>2</td>
<td>LISTA/WORLDCAT</td>
</tr>
</tbody>
</table>

Table 3 is an analysis of the top ten authors who published more than one article. It indicates that there were only five authors who published two or more times. Tanui Arap Tirong and Shibanda, G. G. from Kenya authored 7 of the documents. South Africa’s Dubbled Catherine produced three documents.

5.5 Sources publishing Library and Information Science research in KENYA and SOUTH AFRICA from 1990 to 2005
Table 4: SOURCES PUBLISHING LIBRARY AND INFORMATION SCIENCE RESEARCH IN LISTA DATABASE

<table>
<thead>
<tr>
<th>NO</th>
<th>SOURCES</th>
<th>KENYA</th>
<th></th>
<th>S.AFRICA</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LISTA</td>
<td>%</td>
<td>LISTA</td>
<td>%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Articles</td>
<td></td>
<td>Article</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Library Review</td>
<td>5</td>
<td>36%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>Information development journals</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>Information management</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>4</td>
<td>Quarterly bulletin of the international association</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td>Library management</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>6</td>
<td>Journal of Interlibrary loan and documents</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>7</td>
<td>Online and CD-ROM review</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>8</td>
<td>Southern African journal of library and information science</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>14%</td>
</tr>
<tr>
<td>9</td>
<td>Electronic library</td>
<td>1</td>
<td>7%</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 4 shows that Kenyan academic librarians published 5 (36%) of their articles in *Library Review*, while South Africa published 0 (0%) in the journal. South African academic librarians published 2 (14%) in the *South African Journal of Library and Information science*. Other journals, such as the *Information Development Journal, Information Management, Quarterly Bulletin of the International Association, Library Management, Journal of Interlibrary Loan and Documents, Electronic Library*, all published 1(7.1) Kenyan article and 0 (0%) South African articles.

Table 5: SOURCES PUBLISHING LIBRARY AND INFORMATION SCIENCE RESEARCH IN LISTA DATABASE
A comparison of research and publication pattern and output among academic librarians in Kenya and South Africa from 1990 to 2005.

N=21

<table>
<thead>
<tr>
<th>NO.</th>
<th>SOURCES</th>
<th>KENYA WORLDCAT</th>
<th>S.AFRICA WORLDCAT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Articles</td>
<td>%</td>
<td>Articles</td>
</tr>
<tr>
<td>1</td>
<td>Library Review</td>
<td>7</td>
<td>33.3%</td>
</tr>
<tr>
<td>2</td>
<td>Library Management</td>
<td>3</td>
<td>14.3%</td>
</tr>
<tr>
<td>1</td>
<td>Oxford Publishers</td>
<td>1</td>
<td>4.76%</td>
</tr>
<tr>
<td>2</td>
<td>SCANULS (ECS)</td>
<td>1</td>
<td>4.76%</td>
</tr>
<tr>
<td>5</td>
<td>New Library World</td>
<td>1</td>
<td>4.76%</td>
</tr>
<tr>
<td>6</td>
<td>Campus Wide Information Systems</td>
<td>1</td>
<td>4.76%</td>
</tr>
<tr>
<td>7</td>
<td>For Full Text</td>
<td>1</td>
<td>4.76%</td>
</tr>
<tr>
<td>8</td>
<td>Kenya Economic Association</td>
<td>1</td>
<td>0%</td>
</tr>
<tr>
<td>9</td>
<td>University of Zululand</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>10</td>
<td>Electronic Libraries</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>11</td>
<td>Southern African Institute of International Affairs</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>12</td>
<td>E.G. Malherbe Library</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>13</td>
<td>University of Natal</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 5 shows that in the WORLDCAT database, Kenyan academic librarians published 7 (33.3%) of their articles in the Library Review journal, and 3 (14.3%) in Library Management. South Africa did not publish in these journals. Kenyan academic librarians also published 1 (4.76%) of their articles in each of the following journals/publishers: Oxford, SCANULS (ECS), New Library World, Campus Wide Information Systems, and For full text. South African academic librarians published 1 (4.76%) in Electronic Libraries. South Africa had other publications published by universities, such as the University of Zululand and the University of Natal.

Table 6: Subject published

N=14

<table>
<thead>
<tr>
<th>NO.</th>
<th>SUBJECT</th>
<th>KENYA LISTA</th>
<th>SOUTH AFRICA LISTA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Subject</td>
<td>%</td>
<td>Subject</td>
</tr>
<tr>
<td>1</td>
<td>Library orientation</td>
<td>2</td>
<td>14.3%</td>
</tr>
<tr>
<td>2</td>
<td>Document delivery</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>3</td>
<td>Information dissemination</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>4</td>
<td>HIV infection</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>5</td>
<td>Information technology</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>6</td>
<td>Library collection</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>No.</td>
<td>Subject</td>
<td>Kenya</td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------</td>
<td>-------</td>
<td>----------------------</td>
</tr>
<tr>
<td>7</td>
<td>Library building</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>8</td>
<td>CD-ROM</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>9</td>
<td>Inter library loan</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>10</td>
<td>Reserve collection in libraries</td>
<td>1</td>
<td>7.1%</td>
</tr>
<tr>
<td>11</td>
<td>Rural women</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>12</td>
<td>Electronic journals</td>
<td>0</td>
<td>0%</td>
</tr>
</tbody>
</table>

Table 6 indicates that academic librarians in Kenya published 3 (14.3%) articles on library orientation, while South Africa published 0 (0%) on the subject. Document delivery, Information dissemination, HIV infection, Information technology, Library collection, Library building, Inter library loans and Reserve collections, each totaled 1(7.1%) of the subjects covered by Kenyan academic librarians. South Africa published 0 (0%) on these subjects. South African academic librarians published 1 (7.1%) on Rural Women and 1 (7.1%) on Electronic libraries. Kenya published 0 (0%) on these subjects.

**Table 7: SUBJECT PUBLISHED**

N=21

<table>
<thead>
<tr>
<th>No.</th>
<th>Subject</th>
<th>Kenya</th>
<th></th>
<th>South Africa</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Articles</td>
<td>%</td>
<td>Articles</td>
<td>%</td>
</tr>
<tr>
<td>1</td>
<td>Information technology</td>
<td>4</td>
<td>19%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>2</td>
<td>Cataloguing</td>
<td>2</td>
<td>9.5%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>Library finance</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>4</td>
<td>Library planning</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>5</td>
<td>Marketing</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>6</td>
<td>Library building</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>7</td>
<td>Library orientation</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>8</td>
<td>Human resource</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>9</td>
<td>Fish information</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>10</td>
<td>Library collection</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>11</td>
<td>Reserve collection</td>
<td>1</td>
<td>4.8%</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>12</td>
<td>Bibliography</td>
<td>1</td>
<td>4.8%</td>
<td>3</td>
<td>14.3</td>
</tr>
<tr>
<td>13</td>
<td>Electronic journals</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>4.8%</td>
</tr>
<tr>
<td>14</td>
<td>CD-ROM</td>
<td>0</td>
<td>0%</td>
<td>1</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

Table 7 shows that Kenyan academic librarians published 4 (19%) on information technology, 2 (9.5%) on cataloguing, and 1 (4.8%) each on library finance, library planning, marketing, and library orientation. South Africa published 0 (0%) on these subjects. South African academic librarians published 3 (14.3%) on bibliography, and 1 (4.8%) each on electronic libraries and the CD-ROM.

5.7 Distribution of publications by document type from 1990 to 2005

Fig 4 below illustrates that in LISTA, Kenyan academic librarians published only articles (100%). This was also the case with South Africa (100%). The WORLDCAT database revealed that Kenyan academic librarians published 68.75 % (11) in article form, and 31.25 % (5) in book form. South Africa had 1 (20%) article and 4 (80%) books.
4 Discussions and Conclusions

It was observed that in South Africa, there was a decline in the number of publications between 1995 and 2001. We speculate that this could have occurred because the databases did not index publications during that particular year, or perhaps because academic librarians working in South Africa did not receive any funding, and therefore no research was carried out. There is no pressure on South African academic librarians to conduct research and publish for career development. In contrast, Kenya registered an upward and downward pattern in both databases from 1993 to 1995 and between 2001 and 2005. This could be attributed to the same reasons cited above. Between 1990 and 1992, Kenyan academic librarians published more; the availability of funding could have encouraged them to do so. Although it was assumed that research and publication does pay in terms of career development in the library profession in Kenya, this could not be ascertained because of the low publication output from the University of Nairobi library, which is the biggest in the country in terms of size, and in the number of librarians that qualified for the sample population of this study. Overall, and in terms of publications, Kenyan academic librarians in the sampled libraries were more productive than their South African counterparts. In terms of sampled institutions, the most productive university in Kenya was Moi University, while the University of Kwa Zulu Natal led in South Africa. Subject wise, the study established that Kenyan academic librarians published more articles on information technology and cataloguing. South African librarians published more on bibliography.

As to where academic librarians publish, it was noted that the Library Review journal was the most popular amongst Kenyan academic librarians, while the South African Journal of Library and Information Science was popular with South African academic librarians. Thus, Kenyan librarians publish more outside the country. Regarding whether the publications were collaborative, it was noted that there were more collaborative publications amongst South African academic librarians. Thus most Kenyan academic librarians publish alone.

This study was merely a pilot study. We have taken note of the fact that the study covered only selected libraries in the two countries, publication in other forms or other journal articles indexed in the sampled databases were not included, and a more comprehensive
study is essential for a wholesome picture to be obtained. However, we recommend that: South African academic librarians publish more articles; there should be more collaborative publications; and research and publication should be more diversified. Further research intends to cover more countries and more academic libraries.

References


Peters, T. A. 1999."Remotely familiar: using computerized monitoring to study remote use.” *Library Trends*, vol.49, p.27


115


**Acknowledgement**

I wish to thank Professor Ocholla for his guidance and support in writing and compiling this research. This would never have been possible without his constant advice and input.
An Exploratory study of the Marketing of Library and Information Services: A Comparison of the Mzuzu University and University of Zululand Libraries

George Theodore Chipeta41,42 - (georgechipeta@yahoo.com)

Department of Library and Information Science,
University of Zululand,
South Africa.

Abstract
The purpose of this study was to explore whether or not the Mzuzu University and the University of Zululand Libraries market their library services. The study used both quantitative and qualitative approaches to collect data from students and library staff. The population targeted - students and library staff - was sampled using quota sampling and purposive sampling techniques respectively. Four hundred and seventy one (471) questionnaires were distributed to students and library staff at the Mzuzu University, and the University of Zululand. Data was analysed manually and using Microsoft Excel. The survey results indicate that the libraries at both the Mzuzu University and the University of Zululand did not have a marketing policy in place. However, they both marketed their services. The study recommends that the two university libraries set up library marketing committees which would be responsible for the formulation of marketing policies and their implementation, monitoring and evaluation.

1. Introduction
Like any other organization that provides a service, Giappiconi (n.d) argues that libraries should draw up product strategies, and pricing, distribution, and promotion policies. Giappiconi believes that the interaction of these four elements constitutes the ‘marketing mix’. A number of definitions have been coined to define the meaning of marketing. Two such definitions are provided by De Saez (2002:1-2), who states that ‘marketing is about: collecting information, forecasting trends, consulting all concerned, understanding markets, formulating objectives, planning strategies, implementing strategies, evaluating everything and communicating with everybody; and Ojambo (1994: n.p), who defines marketing as a philosophy of action geared towards managers, forcing them to reorient the administration of their organizations towards fostering better communication with the customers/users in order to understand their needs, offer them a good product or service, and obtain feedback. The aim of this study was to explore and compare the marketing of library services at the Mzuzu University and the University of Zululand Libraries. In order to fulfill the aim of the study, the following objectives were formulated:

i. To ascertain the existence of library marketing policies at the Mzuzu University and the University of Zululand Libraries;
ii. To identify and examine the marketing of products and services;
iii. To establish the libraries’ methods of marketing;
iv. To examine the relationship between the marketing of library services and the awareness of the availability of library services by students;
v. To compare the two libraries’ marketing strategies/policies; and

41 The Author is a masters student in the Department of Library and Information Science, University of Zululand, South Africa and also a lecturer in information studies at Mzuzu, University, Malawi
42 I wish to acknowledge the support received from Dr. Janneke Mostert, the research project supervisor.
vi. To suggest solutions/recommendations to the libraries’ management on the marketing of their libraries’ activities.

2. Literature review
Academic libraries exist for a purpose, namely to support teaching at the college or university, and to support the research of the university faculties and students. As such, they exist to serve a diverse group of people. The primary clientele in an academic or university library consists of undergraduate and graduate students, faculties, researchers, administrators, and staff. Academic/university libraries also have a duty to serve the surrounding community in which they are located. The Mzuzu University and the University of Zululand libraries offer a lot of services that they can market, in the guise of products, people, places, libraries, information services, information professionals, and many more.

Marketing plans for academic libraries
The marketing plan that has been proposed by Reynolds (2003: n.p) involves the development of a promotional plan. Academic and research libraries, like every other institution and business, are increasingly aware of the opportunities and dangers that exist within their environment. Reynolds (2003: n.p) notes that libraries have to deal with the challenges and opportunities that exist. and, it entails librarians leading their organizations onto new plateaus of success.

Reynolds (2003; n.p) opines that conducting library user research is the first step in the overall marketing planning process, and the focus in this process is on the users of academic or research libraries. Here, the first important thing is to know who the customers are. Customers include graduate and undergraduate students, faculties, researchers, staff and administrators, community members, high school students, and others. It is also important for the library to know who the users and potential users of the library are. Each of the primary customers identified have a set of wants and needs in relation to the academic library. It is therefore crucial for the library to find out what these wants and needs are. Wants are things the customers would like the library to provide to improve comfort, such as the extension of services or areas of interest, whereas needs are basic things the library must provide in order to assist the customer in adequately accomplishing their information gathering goals, such as having a proper collection, an easy access system, personal support, and amenable facilities and equipment (Reynolds, 2003: n.p).

Having determined what customers need and want, the library’s management needs to develop and manage marketing strategies. Dibb et al. (2002:16) describe a marketing strategy as encompassing the selection and analysis of a target group · that group of people whom the organization wants to reach, and create and maintain an appropriate marketing mix, which is a ‘toolkit’ of product, place/distribution, promotion, price and people · that will satisfy those customers in the target market.

Products
Products are the library services available to clients, such as lending services, inter-library loans, databases, reference services, online searching services, audio-visual services and periodicals’ services (Giappiconi, n.d: n.p.). Products also include less tangible things, such as planning processes, research consultation, or software or equipment coaching.

Price
Another component of marketing is the price of a service which, according to Giappiconi, (n.d: n.p), includes all direct and indirect costs involved in the production and delivery of the product. Pricing policies of libraries range from charging nothing at all, to requesting fees for some services or payment for all services. However, the chief financial objective is to optimize cost-efficiency and not to make a profit. Price does not necessarily mean cash value, and since marketing is an exchange process, the price paid could be in the form of time, energy, or other opportunities and/or activities foregone by the user.
Place
Place is the marketing term used to describe where the product or service is offered. In many campus libraries, place used to only refer to the physical building where the customer went to get materials.
A university library should be able to serve the academic environment where it is situated more effectively and efficiently by connecting a LAN to its operational system. Various faculty and departmental libraries should be properly networked to enhance proximity to the information, and avoid congestion in the main or central library. This also ensures convenience for the students, lecturers, researchers, and faculty members (Adeyoyin, 2005: n.p). Place/distribution also refers to opening hours, and the internal arrangement of its collections and resources. The term also refers to all the methods one can use to access library services from a distance.

Promotion
Promotion is at times also referred to as communication, and is aimed at encouraging and facilitating the use of the collection and library services. It comprises publicity, promotional activities and public relations. Publicity consists of the direct and indirect use of mass communication, while promotional activities are based on employing direct and short-term methods in order to optimize the use of the collection and library services. The term public relations is based on the principal of indirect communication through intermediaries (Giappiconi, n.d: n.p). Kanaujia (2004: n.p) notes that libraries regularly participate in fairs and advertising in newspapers. Library staff also visit institutions and give presentations.

Awareness, Interest, Desire, Action (AIDA)
De Saeez (2003: 83) states that Awareness, Interest, Desire, and Action (AIDA) is a communication model that is used in promotional and public relations activities. The response sought from the user or customer will usually fall into one of three categories, i.e. cognitive, affective, or behavioral. The communication mix for a promotion or for public relations should aim to make the user aware, or change user perceptions, or actually encourage the user to do something. AIDA is regarded as the most attractive and effective of all marketing models. Thus AIDA is explained as follows:

Awareness – cognitive stage
According to De Saeez (2002: 84), the first step in the communication process is to attract attention. If the product/service is new, then the message must be stated in a way that raises the awareness of the customer. Awareness messages are simple, and frequently provided with eye-catching phrases, graphics or colours.

Interest and Desire – The affective stage
If the product/service is not new but under-utilized, then messages could be used to increase interest by providing more information on how the product/service fits into the lives of the customers, and the problems that the product/service solves. In terms of desire, if the goal is to help the customer decide to buy the product or service, then the messages should provide specific information, with testimonials, on how the product/service would benefit them (Reynolds, 2003: n.p).

Action – the behavior stage
The goal here is to spur the customer into actually using the product/service. Thus special promotions, price reductions, or introductory offers are utilized. According to De Saeez (2003: 85-86), the availability of new technology may be an initial attraction, and is backed by the promise of specialized personnel and individual attention via an appointment system, which is more likely to spur user action. Reynolds (2003: n.p) believes that messages about new products and services or to new customers about existing products and services, should flow through the AIDA cycle. Increasing the usage of current products and services can only occur when customers become more interested or can see themselves using the products/services.
Platforms
Platforms, according to Reynolds (2003: n.p), can serve as the next level theme statement under which several messages might fit and which summarize the overall intention of the library. Platforms often contain different graphics or logos that build visual recognition which, in turn, support the individual messages. Different types of message platforms for different segments of the users, such as undergraduate students, graduate students, faculties, researchers, administrators, staff, and others, are used.

Vehicles and campaign design
Once the library has defined the products and services it would offer and has a clear understanding of the messages it would like the customers to receive, it is then time to design the promotional campaign. This involves selecting the vehicles that best carry the messages and sequencing the messages throughout the length of the campaign period.

The first step involves the selection of vehicles that will carry the messages. Reynolds (2003: n.p) identifies five general types of vehicles used to promote products and services. These are:

Advertising
Advertising is any form of communication about products, ideas, goods or services; that is paid for by a sponsor (library or university, in our case). Dibb, et al. (2002:464) note that advertising is transmitted to a target audience via mass mediums such as television, radio, newspapers, magazines, direct mail, public transport, out-door billboards, catalogues or the Internet. Creativity, humor, surprise, and excitement are used to animate the message, but care must be taken to not obscure the underlying point.

Direct marketing
Rowley (1998: n.p) notes that direct marketing is the use of mail, the telephone, or other non-personal contact tools to communicate with or solicit a response from specific customers and prospects. Mail shots and leaflets inserted in professional magazines are often used to promote products. In the case of a library, examples include: special group flyers (club groups, class lists, customer groups, departments, topic groups, etc), e-mail messages to database groups, special sections in websites, and posters in selected spots.

Personal selling
According to Rowley (1998: n.p), personal selling involves face-to-face interactions with one or more prospective purchasers for the purpose of making sales. This is common within business-to-business marketing transactions. It is especially useful when a detailed explanation is required or when the benefits have to be closely linked to a customer’s needs. In the library and information industry, vehicles include, kiosk sessions at busy spots, specialized offers for information and assistance to class groups, presentations to classes or faculty groups, personal surveys that establish interests, online help, and subject specialists working with faculties.

Sales promotion
Sales promotion, according to Kinnell & MacDougall (1994: 106), consists of short term, attention-getting, incentive schemes such as membership offers, competitions, and free refreshments. Promotional events are also meant to remind people of upcoming events or offer special computer or library services/classes to attract new customers. Examples of these library-vehicles include: special free introductory classes, introductory individualized assistance, free T-shirts or mugs, or a ‘learn from a celebrity’ event.

Public relations and publicity
Public relations, according to Kinnell & MacDougall (1994: 106), are concerned with the relationship between the library and the public. The aim here is to maintain good relations and present the right image to the community. Public relations can be immeasurably enhanced by the attitude of staff in dealing with the users of the library’s services. For instance, a user who is well treated by the staff is likely to go back and recommend the service to others. An important part of public relations is publicity. This term refers to messages conveyed to the public through mass media, but not paid for by the organization.
According to Reynolds (2003: n.p), public relations personnel can send press releases, stories, and pictures to the media (newspapers, radio, TV, newsletters and letters) to stimulate publicity. With libraries, the public includes the community, parents, alumni, potential donors, and other influencers and catalysts. Library-vehicle examples include letters to the editor, columns in campus papers or alumni brochures, releases to local papers, TV spots, announcements, notices in professional publications, and so on.

**Monitoring and evaluation of the promotional campaign**
Reynolds (2003: n.p) believes that it is important to monitor the progress of the promotional campaign, i.e., whether it is reaching the intended target or not, and whether the library is offering the right products and services to customers. If the implementation has not gone according to plan, then it is necessary to go back to the drawing board and revise the entire process. If the plan is successful, then it is a good idea to share the success stories with the beneficiaries and to let customers and interested parties know about increases in use, satisfaction, new skills, and other achievements.

3. Methodology
A survey method was used to collect data. This was accomplished with the use of questionnaires. The target population of the study consisted of the students and library staff at the Mzuzu University in Malawi and the University of Zululand, South Africa. The quota sampling technique was used to enable the researcher to categorize the population (students) into sub-strata, though non-randomly. Purposive sampling was used to handpick library staff according to their relevance to the study. Four hundred and seventeen (417) students and one (1) Senior librarian were selected from the University of Zululand, and fifty two (52) students and one (1) Senior librarian were selected from the Mzuzu University. A census in the tertiary institutions under study found a combined population of nine thousand, two hundred and thirty three students. We used a sampling ratio of 5% to come up with a sample of four hundred and sixty nine (469) students for inclusion in the study.

4. Results and discussions.
4.1 Librarians
The librarians had to respond to the following questions: (a) Which university do the respondents belong to? (b) What is the rank of the respondents? (c) Does the library have a marketing policy? (d) What library products and services are marketed? and (e) What communication channels are used in the promotion and publicity of the library?

The respondents belonged to the Mzuzu University and the University of Zululand respectively. The respondent from the Mzuzu University was the Reader services librarian, while the University of Zululand respondent was the Senior librarian. Both university libraries do not have a marketing policy.

4.1.3. Library products and services marketed.
The results indicate that both libraries market their library products and services. Table 1 on the next page shows the library products and services marketed by Mzuzu University and the University of Zululand libraries.

<table>
<thead>
<tr>
<th>Mzuzu University Library</th>
<th>University of Zululand library</th>
</tr>
</thead>
<tbody>
<tr>
<td>Databases</td>
<td>Databases</td>
</tr>
<tr>
<td>Malawiana</td>
<td>Uzulu</td>
</tr>
<tr>
<td>Inter-Library loans</td>
<td>Inter-library loans</td>
</tr>
<tr>
<td>lending and</td>
<td>Periodicals</td>
</tr>
<tr>
<td>Photocopying services</td>
<td>Audio-Visual</td>
</tr>
<tr>
<td></td>
<td>Reference</td>
</tr>
<tr>
<td></td>
<td>Photocopying</td>
</tr>
</tbody>
</table>
Table 1. Library products and services marketed.

4.1.4 Communication channels used for marketing.
The results in Table 2 (below) indicate that common channels of communication used for the marketing of library products and services include sign posting, displays, talks and lectures, and posters.

<table>
<thead>
<tr>
<th>Method of marketing</th>
<th>MU</th>
<th>UZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leaflets</td>
<td>*</td>
<td>✓</td>
</tr>
<tr>
<td>Sign posting</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Displays</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Talks &amp; lectures</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Exhibitions</td>
<td>*</td>
<td>✓</td>
</tr>
<tr>
<td>Web articles</td>
<td>*</td>
<td>✓</td>
</tr>
<tr>
<td>Posters</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

Table 2. Communication Channels used for marketing.

4.2 Students.
Students were expected to respond to the following questions: (a) What is your gender? (b) Are you aware of the availability of library products and services and their use? (c) How did you become aware of the available library products and services? (d) What is the most effective method that the library could use in marketing itself to users?

4.2.1 Gender of the respondents.
Of the 223 respondents from the University of Zululand, 63 (28%) were male and 160 (72%) were female, whereas at the Mzuzu University, 23 (53%) of the 43 respondents were female, and 20 (47%) male.

4.2.2 Awareness of the available library products and services and their use.
This question intended to determine the respondents' awareness of the available services and their use (or non use thereof). There is a direct relationship between the marketing of library products and services and an awareness of the services and their use. The results are presented in Table 3 below.

<table>
<thead>
<tr>
<th>MU (N= 43)</th>
<th>UZ (N=223)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>Aware &amp; Used</td>
</tr>
<tr>
<td></td>
<td>MU Value %</td>
</tr>
<tr>
<td>Circulation</td>
<td>34</td>
</tr>
<tr>
<td>Reference</td>
<td>39</td>
</tr>
<tr>
<td>Periodical</td>
<td>37</td>
</tr>
<tr>
<td>Malawiana</td>
<td>39</td>
</tr>
<tr>
<td>*ILL</td>
<td>16</td>
</tr>
<tr>
<td>Audio-Visual</td>
<td>22</td>
</tr>
<tr>
<td>OPAC</td>
<td>38</td>
</tr>
<tr>
<td>Databases</td>
<td>36</td>
</tr>
</tbody>
</table>
Table 3. Awareness of the available library products and services and their use

Note: ILL denotes Inter-library Loans

In terms of Circulation services, 79% of the students from Mzuzu University were aware of the services and had used them, which was significantly more than students from the University of Zululand with 30%. In terms of Reference services, the results indicate that 91% of the students at the Mzuzu University were aware of the services and had used them, while only 50% of the students at the University of Zululand indicated the same. Concerning Periodical services, fewer students (30%) from the University of Zululand were aware of the services and had used them, than students from Mzuzu University (86%). Pertaining to Malawiana/Uzulu services, results show that from the Mzuzu University, 91% of the students were aware of and had used the Malawiana services, as opposed to only 59% from the University of Zululand (in terms of Uzulu services). Regarding Inter-library loans, students from the University of Zululand (41%) were more aware of the services and had used them than their counterparts from the Mzuzu University (37%). Audio-Visual services' results show that 51% of the students from the Mzuzu University were aware of the services and had used such services, in contrast to 18% from the University of the Zululand. In terms of OPAC services, the results indicate that students from the Mzuzu University (88%) were more aware of the services and had used them, than students from the University of Zululand (34%). Lastly, pertaining to Database Services, 84% of the respondents from the Mzuzu University were aware of the database services and had used such services, while the same was true for only 26% of the students from the University of Zululand.

4.2.3 Methods of becoming aware of the services.

This question sought to establish how the respondents became aware of the services offered by the libraries. Various methods were provided for them to choose from. Figure 1 on the next page shows the methods through which respondents became aware of the services.

Mzuzu University (N=43), University of Zululand (N=223)

<table>
<thead>
<tr>
<th>Methods for becoming aware of the services</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading annual reports</td>
</tr>
<tr>
<td>Reading pamphlets</td>
</tr>
<tr>
<td>Listening to the local radio</td>
</tr>
<tr>
<td>Reading library guides &amp; leaflets</td>
</tr>
<tr>
<td>Indexes</td>
</tr>
<tr>
<td>Library signs &amp; sign posting</td>
</tr>
<tr>
<td>Wandering around the library</td>
</tr>
<tr>
<td>Talks &amp; lectures</td>
</tr>
<tr>
<td>Librarians’ user education</td>
</tr>
</tbody>
</table>

Figure 1. Methods that users became aware of the services.

123
The most popular method through which students from the Mzuzu University became aware of the services was through librarians’ user education (79%), followed by talks and lectures (53%). The least popular method of the students from the Mzuzu University was listening to the local radio (5%). At the University of Zululand, the most popular method was wandering around the library (43%), followed by talks and lectures (40%), while the least popular method was reading annual reports (3%). This trend indicates that in both Universities, talks and lectures came second in raising the students’ awareness of services.

4.2.4 Most effective methods that the Library could use in marketing itself to users.
This question sought respondents’ opinions on the most effective methods that libraries could employ in marketing themselves to users. Responses are graphically presented in the chart on the next page.

Mzuzu University (N=43), University of Zululand (N=223)

![Most effective methods libraries could use in marketing themselves to users](chart.png)

**Figure 2. Most effective methods that libraries could use in marketing themselves to users**

Results show that posters were selected by the respondents as the most effective methods libraries could use in both the University of Zululand (54%) and Mzuzu University (49%). At the University of Zululand, students chose talks and lectures as their second most effective method, while students at the Mzuzu University ranked e-mail marketing as second. The University of Zululand’s least popular methods were e-mail marketing (0%), exhibitions (0%), and press releases and press conferences (0%). The Mzuzu University’s least effective marketing methods were local radio/paid TV advertisements (0%), local media (0%) and leaflets (0%).

5. Conclusion
The results indicate that there are some marketing activities going on at both the University of Zululand and Mzuzu university libraries. They also show that the two libraries have a lot in common. For instance, they have similar products and services that they seek to market, and employ similar marketing methods, such as sign posting, displays, talks and lectures, and posters. Much as this is the case, the marketing of library products and services takes
place without marketing policies in either of the two libraries. The Readers services librarian from the Mzuzu University Library and the Senior librarian from the Mzuzu Library both listed a number of similar services that they market using similar methods. Both libraries need to collaborate on the establishment of marketing policies and consult each other on the implementation of such a policy.

Interestingly, students and both librarians from Mzuzu university and the University of Zululand, cited posters as the most effective and preferred method libraries should use in marketing themselves to users, and as a channel of promotion and publicity.

The results show that more students from the Mzuzu University are aware of the available services and make use of them than students at the University of Zululand, despite the fact that the University of Zululand markets its services on a daily basis, unlike Mzuzu University, which markets its products and services depending on their availability.

The study concludes with the following recommendations:

- The two university libraries should set up library marketing committees that would be responsible for formulating marketing policies and their implementation, monitoring and evaluation.
- The two university libraries should intensify the marketing of Internet, Audio-Visual, Inter-library Loans and OPAC services because a lot of students indicated that they were not aware of such services.
- The libraries should also use T-shirts, e-mail Marketing, local radio/paid TV ads and the Local media, such as the Zululand Observer for the University of Zululand and Boma Lathu for the Mzuzu University, as suggested by the students.
- The two libraries should regularly conduct surveys to establish the needs of their users.

References


An Exploratory Study of the Marketing of Library and Information Services; A Comparison of the Mzuzu University and University of Zululand Libraries

Challenges and opportunities facing ICT and rural development initiatives amongst South African and Kenyan rural women

A.K. Kwake\textsuperscript{43} Alice_kwake@hotmail.com

Department of Library and Information Science and
Department of Computer Science
University of Zululand
X1001, KwaDlangezwa 3886
South Africa

Abstract
This study identifies the challenges and opportunities facing ICT and rural development initiatives amongst South African and Kenyan rural women. Two research methods were deployed in order to gather data from the respondents. First, the case study method was used to collect data from key informants in four organizations that work with ICTs and rural women. Using frame lists from both South Africa and Kenya, a total of four organizations were purposefully selected to include Womensnet and National Community Radio Forum (NCRF), and AfriAfy and the Arid Lands information Network (ALIN-EA). In the second method, survey research was used to interview women aged between 16 and 60. A total of 400 respondents were drawn from the survey method to form the sampling size. The sampling data was obtained from Census household data from the magisterial districts of Umlalazi, i.e. Eshowe, Amatikulu, Gigindlovu, and Mtunzini (South Africa), and from the sub-divisions of the Kaplomai Division in Trans-Nzoia district, i.e. Kimoson, Sinyerere, Sitatunga, and Makutano (Kenya). By using the snowball technique, women respondents who were directly and indirectly linked were identified and consequently interviewed. The survey results signify that problems of access and exclusion still predominate, as an average of only 11(5.5%) respondents use modern technologies such as the computer/internet, and more than half (115: 57.5%) of the respondents faced problems ranging from in-affordability to long distances and lack of time. However, on a positive note, the versatility of cellular technology was found to transcend poverty and geographical barriers.

1. Introduction

According to the UNDP (2001:3-16), there are approximately six challenges that have affected the design, implementation and outcome of information, communication and technology development (ICTD) initiatives, the first of which is awareness. The UNDP argues that harnessing ICTs for human development requires awareness raising and constituency building across all levels of society. As maintained by the UNDP, the link between ICTs and many development challenges is not always obvious, especially within countries with low educational standards and poor physical and information

\textsuperscript{43} Alice Kituiy Kwake, PhD, is a post Doctoral Fellow at the Department of Computer Science, University of Zululand, South Africa. She is also a lecturer in the department of Information Technology, Moi, University Kenya.
infrastructures. Following this is the challenge poised by politics, where the UNDP argues that information and ICT initiatives are also political because the effectiveness and potential of ICT initiatives can be inhibited or circumscribed by national and/or local power relations. Examples of this are the many cases of state controlled newspapers and radio and television stations. The UNDP states the third challenge as that of access, where barriers to universal access are not only about the availability of telecommunications infrastructure and computing equipment, but also barriers to individual access, such as educational and socio-cultural (e.g. technophobia) hurdles. In the fourth challenge, i.e. relevancy and meaningful use, three interrelated issues are identified, namely:

Information has to be relevant and useful to end-users if ICT initiatives are to be appropriated. Even if the information accessed is useful, development outcomes would be negligible unless the end-users have the capacity to act. As such, market prices delivered to the rural poor are useless if there are no roads to transport goods, and medical advice delivered to rural healthcare workers is meaningless if there is no money to purchase medicines. An even better example is cited by Panos (1995/1998 in UNDP 2001:12), who describes the US based Earth Market Place initiative that was set up in 1995. Despite the creation of an elaborate website with the capacity to sell products, it was unable to raise sufficient capital to undertake marketing activities and to guarantee the quality and delivery of the imported produce. ICTs work best when they render more effective existing or clearly desired information flows. In other words, it is important to include the targeted user in the project planning stages in order to establish what types of information and services are most appropriate.

The fifth challenge is that of sustainability, where the UNDP notes that ICTs are compromised by unrealistic time frames, insufficient training, and inappropriate technology. Finally, the challenge of coordination is cited sixth, where the UNDP asserts that a lack of coordination can lead to the duplication of efforts and the incompatibility of technical solutions.

Invariably, information technology can offer significant opportunities for virtually all women in developing countries, but most women within developing countries find themselves even further removed from the information age than the men whose poverty they share. If the access to and use of these technologies is directly linked to social and economic development, then it is imperative to ensure that women in developing countries understand the significance of technologies and how to use them (Hafkin and Taggart, 2001). The UNDP (2002) reinforces the notion that ICT’s ‘promise’ of substantial cost savings and potential to reach new markets make them attractive to women. The fact that the majority of the rural poor in developing countries are women, who generally experience more difficulties in accessing ICTs than men, raises concerns about the ability of ICTs to significantly impact on country development.

Hafkin and Taggart (2001:6) argue that “the single most important factor in improving the ability of women in developing countries to take full advantage of the opportunities offered by information technology is more education, at all levels, from literacy through scientific and technological education’. In other words, women are poorly placed to benefit from the knowledge economy because they have less access to scientific and technical education, skills training, and development. Additionally, Hafkin (2002:1) attests to the fact that women are not likely to benefit equitably from ICT projects unless special efforts have been made to: (i) identify their situation and needs; and (ii) take effective action in order to incorporate their active participation in project implementation and development. As such, women not only have less access to the technology itself, but also find themselves financially limited and with less time to learn and use the technology. The author also argues that women are absent from decision-making positions in information technology in developing countries.
In terms of opportunities, the Organization for Economic Corporation and Development (OECD) (2004:9-10) denotes “that capital deepening through investment in ICT establishes the infrastructure for the use of ICTs (the ICT networks) and provides productive equipment and software to businesses. This is because investment mechanically adds to the capital available to workers, thereby contributing to labour productivity growth”. For instance, ICT accounted for between 0.3 and 0.8 percentage points of growth in GDP and labour productivity over the 1995 - 2001 period in OECD countries.

The OECD further notes that having ICTs linked to the sector and producing ICT goods and services is characteristic of rapid technological progress and very strong demand. This is illustrated in Finland, Ireland and Korea, where 1 percent of aggregate labour productivity growth between 1995 and 2001 was due to the strong productivity performance of the ICT sector.

Furthermore, the contribution of ICT services (such as finance, business services and distribution) to aggregate productivity growth rose slightly during the 1990s in Finland, the Netherlands, Norway and Sweden, and even more substantially in Australia, Canada, Ireland, Mexico, the UK and the US. Network effects have also increased the overall efficiency of using labour and capital, or multi-factor productivity growth (MFP).

In this study, careful attention was given to women who reside in the rural areas of KZN (South Africa) and Trans-Nzoia district (Kenya). The word “rural” is intended to mean places with rural characteristics, such as low levels of service (e.g. transport, water and medical services), non urban settlements (such as riparian villages) and high incidences of poverty (Ikoja · Odongo 2002:192). According to the Uthungulu District Municipality report (2003), the majority of the population within the Umlalazi Sub-Region is migrant, resulting in larger female numbers within the region. Further reports by the Uthungulu District Municipality (2003) indicate that the Umlalazi sub-region/municipality is mostly rural in nature, with a few urban settlements. The report asserts that the former KwaZulu districts are poorly developed, with traditional, communal and tenure/ownership systems. The female population within the Umlalazi municipality constitutes 53.5%, whilst the male population averages 46.5% (UIDP 2002:4). In Kenya, attention was given to rural women who reside in the rural areas of the Kaplamaı division in Trans-Nzoia district. According to the Central Bureau of Statistics (2002), most of the rural inhabitants in the Kaplamaı division are women, with 286,836 females and 286,836 males.

In an effort to determine the challenges and opportunities facing rural women in ICT and rural development, this paper explores the following questions: What problems do rural women experience when accessing and using ICTs? What are the views/comments on the use and availability of ICTs in the rural areas of KZN and Trans-Nzoia district? Which ICTs serve rural women’s needs in KZN and Trans-Nzoia and in what areas? How do ICTs enhance rural women’s social welfare and quality of life in the rural areas of KZN and Trans-Nzoia district?

2. Research methodology

Two research methods were deployed in order to gather data from the respondents. First, the case study method was used to collect data from key informants in four organizations that work with ICTs and rural women. Using frame lists from both South Africa (Sangonet, 2005:1) and Kenya (EUFORIC, 2006), a total of four organizations were purposefully selected to include Womensnet and National Community Radio Forum (NCRF), and AfriAfa and the Arid Lands information Network (ALIN-EA) respectively from South Africa and Kenya. In the second method, survey research was used, and women aged between 16 and 60 were targeted for interviews. Data was collected from a cross section of female inhabitants in the region of the study in order to determine the relationship between the type of ICT resources accessed and used. The survey research design was found suitable, given the large number of respondents. However, the research design took into account the purpose of the research, the accuracy of the results, and the cost, time and labour involved.
In Kenya, survey data was obtained from the sub-divisions of the Kaplama Division in Trans-Nzoia district, i.e. Kimoson, Sinyereere, Situtanga and Makutano. The sampling frame included: small-scale traders (68: 34%); housewives (29: 14.5%); educators/teachers (27: 13.5%); farmers (26: 13.0%); students (11: 5.5%); domestic workers (10: 5.0%); preachers (10: 5.0%); farm workers (6: 3.0%); large-scale entrepreneurs (5: 2.5%); nurses (4: 2.0%); clerical workers (2: 1.0%); and community development workers (2: 1.0%).

In South Africa, a similar sampling frame included: small-scale traders (58: 29.0%); housewives/homemakers (48: 24.0%); farm employees (25: 12.5%); domestic workers (18: 9.0%); educators/teachers (16: 8.0%); students (15: 7.5%), entrepreneurs managing large-scale enterprises (3: 1.5%); clerical workers (9: 4.5%); community development workers (6: 3.0%) and two preachers (2: 1.0%). Sampling data was obtained from census household data from the magisterial districts of Umlalazi, i.e. Eshowe, Amatikulu, Gigindlovu and Mtunzini.

A sample size of 400 was deemed suitable, given that the study population in both countries was beyond 5000. This selection was informed by Gay’s guidelines (1996:125), which state that: (i) the larger the population size, the smaller the percentage of the population needed to get a representative sample; (ii) for smaller populations, i.e. where N<100, there is little point in sampling; (iii) if the population size is around 1500, 20% should be sampled; and (iv) beyond 5000, the population size is irrelevant and a sample size of 400 is adequate.

By using the snowball technique, women respondents who were directly and indirectly linked were identified and consequently interviewed.

3. Results
This section responds to the research objectives outlined in section 1. Thus section 3.1, responds to the question “What problems do rural women experience when accessing and using ICTs? section 3.2 responds to the second research question, “What are the views/comments on the use and availability of ICTs in the rural areas of KZN and Trans-Nzoia district?; section 3.3 responds to the question, Which ICTs serve rural women’s information needs in rural KZN (South Africa) and Trans-Nzoia (Kenya)? And lastly, section 3.4 responds to the question “how do ICTs enhance rural women’s social welfare and quality of life in the rural areas of KZN (South Africa) and Trans-Nzoia District (Kenya)?

3.1 Problems women face when accessing and using ICTs in the rural areas of KZN (South Africa)
In table 1, respondents were asked questions relating to ICT problems/hindrances. Using a close-ended questionnaire, appropriate multiple answers were selected. Notably, 113 (56.5%) of the South African respondents felt that ICT services were unaffordable, with another 93 (41.5%) stating that ICTs were too far removed from them. Other inhibitors were time (93: 46.5%), computer illiteracy (42: 21.0%), poor roads (25: 12.5%) and cultural taboos (15: 7.5%). The figures below clearly illustrate that problems of access and exclusion for women in rural areas are evident, as an average of 96 (48%) respondents faced problems ranging from in-affordability to long distances and lack of time.
Table 1  
Hindrances facing women when accessing and using ICTs in rural South Africa N= 200 and in Kenya N=200

<table>
<thead>
<tr>
<th>Impeding factors</th>
<th>SA f</th>
<th>SA %</th>
<th>Kenya f</th>
<th>Kenya %</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICT services are unaffordable</td>
<td>113</td>
<td>56.5</td>
<td>64</td>
<td>32.0</td>
</tr>
<tr>
<td>Time</td>
<td>93</td>
<td>46.5</td>
<td>27</td>
<td>13.5</td>
</tr>
<tr>
<td>ICT services are far away</td>
<td>82</td>
<td>41.0</td>
<td>38</td>
<td>19.0</td>
</tr>
<tr>
<td>Computer illiteracy</td>
<td>42</td>
<td>21.0</td>
<td>32</td>
<td>16.0</td>
</tr>
<tr>
<td>Roads are poor</td>
<td>25</td>
<td>12.5</td>
<td>16</td>
<td>8.0</td>
</tr>
<tr>
<td>Cultural Taboos</td>
<td>15</td>
<td>7.5</td>
<td>23</td>
<td>11.5</td>
</tr>
</tbody>
</table>

3.1.1 Problems women experience when accessing and using ICTs in RVP (Kenya)

64 (32.0%) respondents in RVP (Kenya) expressed problems ranging from cost, to distance (38, 19%) and time (27; 13.5%). Other pressing problems include computer illiteracy (32; 16.0%), cultural taboos (23; 11.5%) and poor road networks (16; 8.0%).

Notably, survey results indicate that problems of access and exclusion also abound in RVP (Kenya), as an average of 43 (21.5%) respondents face problems that range from cost, to time and distance.

3.2 Comments on the use and availability of ICTs in rural KZN (South Africa) and rural RVP (Kenya)

In table 2, respondents were asked to give their personal responses to an open-ended question regarding the use and availability of ICTs in their community. The aim of this question was to capture varying opinions and attitudes related to ICT use and accessibility in their community. Data was then analyzed using content analysis. The survey revealed that a significant number (57; 28.5%) of the respondents in KZN (SA) felt that ICTs were not only unavailable and inaccessible to them, but also difficult to use. Similarly, 25 (12.5%) respondents felt that ICTs are costly and unaffordable. Coincidentally, the number of those who found ICTs to be handy (20; 10%) and those who felt that ICT centres should be established near rural women (20; 10%) were similar. 9 (9.5.0%) respondents were of the opinion that ICTs were easily available and accessible, while 18 (9.0%) felt that ICTs are affordable. A few respondents attuned to problems with infrastructure, such as lack of power (13; 6.5%) and poor TV and radio networks (10; 5.0%).
Challenges and opportunities facing ICT and rural development initiatives amongst South African and Kenyan rural women

Table 2 Comments on the use and availability of ICTs in the community. N=200 (South Africa)

<table>
<thead>
<tr>
<th>Comments</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would like affordable ICTs</td>
<td>63</td>
<td>31.5</td>
</tr>
<tr>
<td>ICTs should be made available</td>
<td>48</td>
<td>24</td>
</tr>
<tr>
<td>ICTs should be made accessible</td>
<td>28</td>
<td>14</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Comments</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unavailable, difficult to use</td>
<td>57</td>
<td>28.5</td>
</tr>
<tr>
<td>ICTs are costly &amp; unaffordable</td>
<td>25</td>
<td>12.5</td>
</tr>
<tr>
<td>ICTs are handy</td>
<td>20</td>
<td>10.0</td>
</tr>
<tr>
<td>Establish ICT centres near rural women</td>
<td>20</td>
<td>10.0</td>
</tr>
<tr>
<td>Easily available and accessible</td>
<td>19</td>
<td>9.5</td>
</tr>
<tr>
<td>ICTs are affordable</td>
<td>18</td>
<td>9.0</td>
</tr>
<tr>
<td>Lack of power</td>
<td>13</td>
<td>6.5</td>
</tr>
<tr>
<td>Great improvement in ICTS</td>
<td>10</td>
<td>5.0</td>
</tr>
<tr>
<td>Poor TV &amp; Radio networks</td>
<td>10</td>
<td>5.0</td>
</tr>
<tr>
<td>There’s no trust in ICTs</td>
<td>8</td>
<td>4.0</td>
</tr>
</tbody>
</table>

| Total                                         | 200       | 100     |

Table 3

Comments on use and availability of ICTs in the Community. (Kenya) N=200

<table>
<thead>
<tr>
<th>Comments</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is improved information access with the use of ICTs</td>
<td>14</td>
<td>7</td>
</tr>
<tr>
<td>Use of ICTs depends on ones lifestyle</td>
<td>11</td>
<td>5.5</td>
</tr>
<tr>
<td>ICTs are very handy</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>There is need for ICT centres in rural areas</td>
<td>15</td>
<td>7.5</td>
</tr>
<tr>
<td>TV/ Radio networks are poor</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Lack of power hinders use of ICTs</td>
<td>15</td>
<td>7.5</td>
</tr>
</tbody>
</table>

| Total                                         | 200       | 100     |

In table 3, results from Kenya indicate that a large number of the respondents (63; 31.5%) believed that ICTs were unaffordable, followed by 48 (24%) stating them as unavailable, and 28 (14%) as inaccessible. Therefore on average, the survey portrayed that 139 (69.5%) respondents felt that ICTs were either too
far, too costly or entirely unavailable. Only 16 (8%) respondents acknowledged the usefulness and availability of ICTs, citing that they were “handy” (2; 1%) or “improved access to information” (14; 7%).

The table indicates that a significant number (82; 41.0%) of the respondents in rural KZN (SA) felt that ICTs were not only unavailable and inaccessible to them, but also difficult to use. Similarly, an average of 139 (69.5%) respondents in rural RVP (Kenya) felt that ICTs were too far, too costly or entirely unavailable. Evidently, there was a larger percentage of rural respondents (70%) in RVP (Kenya) who felt that ICTs were inaccessible.

### 3.3 How ICTs have enhanced the rural women’s quality of life

A number of arguments have been raised as to whether or not ICTs contribute towards the improvement of a society's quality of life. With this in mind, a structured question making use of the likert scale was designed. Respondents were expected to answer the question based on areas in which ICTs have served them best. In this question, the scale of 4 denoted a high and favourable response ("always"), followed by 3 ("often"), 2 ("sometimes"), 1 ("never") and a "not applicable" scale. By calculating the average for each area listed, the study was able to arrive at conclusive remarks.

**Table 4 How ICTs have enhanced the women’s quality of life in South Africa (n=200) and Kenya (n=200).**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Always SA</th>
<th>Often SA</th>
<th>Sometimes SA</th>
<th>Never SA</th>
<th>N/a SA</th>
<th>Av=% 4+3+2 SA</th>
<th>P-Value SA</th>
<th>Always K</th>
<th>Often K</th>
<th>Sometimes K</th>
<th>Never K</th>
<th>N/a K</th>
<th>Av=% 4+3+2 K</th>
<th>P-Value K</th>
</tr>
</thead>
<tbody>
<tr>
<td>To listen to news</td>
<td>157</td>
<td>121</td>
<td>12</td>
<td>35</td>
<td>14</td>
<td>26</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>5</td>
<td>6</td>
<td>91.5</td>
<td>91.0</td>
<td>0.8596</td>
</tr>
<tr>
<td>In touch with family and friends</td>
<td>160</td>
<td>85</td>
<td>2</td>
<td>35</td>
<td>8</td>
<td>54</td>
<td>24</td>
<td>20</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>85.0</td>
<td>87.0</td>
<td>0.5647</td>
</tr>
<tr>
<td>Entertainment</td>
<td>88</td>
<td>117</td>
<td>35</td>
<td>42</td>
<td>20</td>
<td>30</td>
<td>47</td>
<td>6</td>
<td>10</td>
<td>5</td>
<td>7</td>
<td>71.5</td>
<td>94.5</td>
<td>0.0000</td>
</tr>
<tr>
<td>To fax doc.</td>
<td>41</td>
<td>11</td>
<td>17</td>
<td>5</td>
<td>30</td>
<td>16</td>
<td>90</td>
<td>162</td>
<td>22</td>
<td>6</td>
<td>44.0</td>
<td>16.0</td>
<td>0.0000</td>
<td></td>
</tr>
<tr>
<td>Data proc.</td>
<td>38</td>
<td>9</td>
<td>5</td>
<td>6</td>
<td>15</td>
<td>31</td>
<td>115</td>
<td>147</td>
<td>27</td>
<td>7</td>
<td>29.0</td>
<td>23.0</td>
<td>0.1721</td>
<td></td>
</tr>
<tr>
<td>For research purposes</td>
<td>20</td>
<td>7</td>
<td>15</td>
<td>13</td>
<td>18</td>
<td>73</td>
<td>130</td>
<td>103</td>
<td>17</td>
<td>4</td>
<td>26.5</td>
<td>46.5</td>
<td>0.0431</td>
<td></td>
</tr>
</tbody>
</table>
Survey findings indicated that an average of 91.5% of the respondents in both rural KZN (South Africa) and rural RVP (Kenya) felt that ICTs (particularly the radio and TV) play a major role in informing women about current events within and beyond their borders. This was followed closely by the need to keep in touch with family and friends (81.0% in South Africa and 87.0% in Kenya). For this purpose, the mobile phone was cited as particularly useful by the respondents. As mentioned earlier on, the cell phone has a clear advantage over the telephone. In South Africa, 15% use it compared to 10.2% who use the telephone, while in Kenya, it is used by 12.8% of the respondents, while the telephone is only used by 4.0%.

Other social factors cited as important by the respondents include the ability to listen to music and other entertaining programs. With the help of ICTs, this service recorded the highest result overall, with 94.0% for Kenya and 71.5% for South Africa.

3.4 ICT resources used by rural women

The use of “old” technologies, such as radio and TV, is high in all sectors (i.e. education, health, agriculture, social welfare and business) of South Africa. This is in stark contrast to the paltry use of modern technologies such as the computer/Internet. The use of the radio alone scored an average of 73.4%, while the use of the TV averaged 39.2% amongst the rural respondents. Compared to 10.2% who used the landline telephone, the mobile phone scored reasonably well, as 15.0% used it for their information needs.

In Kenya, the prevalence of old technologies (i.e. radio and TV) was also high in all sectors (i.e. education, health, agriculture, social welfare and business). Survey findings indicated that the radio alone scored an average of 74.4%, while the TV averaged 37.8%. Again, this is in stark contrast to modern technologies such as the computer/internet, which scored an insignificant 1.0%. The mobile phone (12.8%) scored considerably well against the telephone, which garnered only 4.0% of the respondents.

4 Discussions: Challenges and opportunities

Problems of access and exclusion are still apparent, particularly with regard to the use of computers and the internet in both countries. These views are confirmed by Marker, Wallace and McNamara (2002:12), who argue that poor infrastructure, the unreliability of ICTs, and high costs are major challenges facing ICT development in developing countries. Similarly, in support of the low use of modern technologies
such as the computer/internet, Emdom in Parkinson (2005:46) argues that high cost, and to a lesser degree, the low quality of internet connectivity, are challenges that have severely limited or blocked efforts to offer the internet to rural schools and rural communities in South Africa.

It has also been noted that problems of access and exclusion in rural areas are compounded by an insufficient assessment of local conditions. For instance, authors such as Ballantyne, Labelle, and Rudgard (2000:2) argue that the use of the Internet is constrained in developing countries by the low provision of appropriate content, both in terms of language and subject matter. By the same token, Bridges.org (2001), denote that “real access” to technology is one of the key elements necessary for integrating technology into society. In other words, is the technology in question available, physically accessible and affordable?

Notably, most rural women are still educationally disadvantaged, a fact supported by the survey results, which indicate that 31% [of the respondents] in rural KZN (South Africa) and 35.5% in rural RVP (Kenya) had obtained primary education alone. This is in addition to the fact that 42 (21%) respondents in South Africa and 32 (16%) respondents in rural RVP (Kenya) identified computer illiteracy as an impeding factor to accessing ICTs. Hafkin and Taggart (2001:1) also argue that women are unable to benefit from the knowledge economy as they lack scientific and technical education. Other challenges, as cited by the respondents in South Africa, though insignificant, revealed a general feeling of apathy, and include lack of electrical power (13: 6.5%), untrustworthiness (8: 4.0%) and poor TV and radio networks (10: 5.0%). Additional challenges to ICT access in rural RVP (Kenya) include cultural taboos (23: 11.5%) and poor road networks (16: 8.0%).

Although the use of the fax machine (44%) stood out as an important activity, particularly in South Africa, it scored dismally in Kenya (16.0%). Furthermore, not many rural women use ICTs for activities such as data processing and e-commerce. E-commerce scored a low average of 20.5% in rural KZN (SA) and 17.0% in rural RVP (Kenya), and data processing garnered 29.0% in rural KZN (SA) and 23.0% in rural RVP (Kenya). As pointed out by Marcelle (2002:3), advanced applications such as e-commerce can only be supported by appropriate infrastructure and sound supporting policies. According to Marcell, 85% of the world’s commerce websites are US-based, and not many people possess visa cards.

Needless to say, there are enormous opportunities to be gained from the use and development of ICTs. For instance, the World Bank (2002: ix) states that access to information and communication technologies is crucial for economic development and poverty reduction, affecting poverty reduction in three significant ways, i.e.: ICTs increase the efficiency and global competitiveness of the economy in growth and development; ICTs enable the better delivery of public services in areas such as health and education; and ICTs create new sources of income.

Batchelor, Scott and Taylor (2005:9), underscore the importance of the mobile phone, arguing that villagers are willing to pay up to $1 per minute to make essential calls. This is because cellular technologies are versatile and transcend poverty and geographical boundaries. According to the authors, cellular technologies provide access to crop prices, market information, and currency rates. For instance, mobile initiatives in Kenya are successful as they provide an opportunity to link ICTs with sustainable livelihoods in activities such as agriculture, pastoralism, entrepreneurship, and information regarding employment. According to Wainaina (2005:25-28), the use of mobile phone text messaging for the provision of market prices, employment vacancy alerts, and local news to disadvantaged communities and slum dwellers, invaluably contributes toward poverty reduction. Examples include SokoniSMS, which empowers farmers through an SMS market price service launched by the Kenyan Agricultural Commodity Exchange (KACE) in 1997; Simu ya Jamii [family phones] Community Phone services, which are small scale businesses that run mobile telephone kiosks with the help of Safaricom limited and other local micro-finance organizations; and the CommunityNews Service (situated in the heart of slum dwellers), which sends regular messages relating to health, sanitation, business advice and scholarship opportunities to over 3,000 residents in Kenya’s largest informal settlement (i.e. Kibera). For
the most part, the success of these cell-phone initiatives can also be attributed to their ability to simplify the provision of services and also promote economic activity (The Panos Institute, 2004:1-4).

The radio also plays a crucial role in enhancing the social and welfare standards of marginalised rural woman. Ilboudo (2003:206-208) affirms that the radio has the capacity to enable the broad participation of men and women within a local community because it is cheap and can be used to disseminate information in a variety of languages and in geographically distant or restricted areas. Ranchod (2001) supports these views when observing that 80% of South Africans listen to the radio primarily because it is free, does not need electricity, a telephone line or literacy to ensure access. According to Ranchod, this has enabled women to communicate in local languages and listen to local programs.

5. Conclusion/Recommendations

According to Marcelle (2002:3), the types of ICT policies and strategies needed to incorporate women in development programs calls for the empowerment of women through the enhancement of their skills, knowledge, and access to ICTs. This includes making improvements in access and promoting initiatives to include rural women and women in the informal sector.

Women are also not likely to benefit equitably from ICT projects unless special efforts have been made to identify their needs and take effective action to incorporate their active participation in project implementation and development. Odame (2005: 15) illustrates that on average, women have less income, education, time and mobility, and face religious or cultural constraints that restrict their access to, and use of, technology. Odame further argues that some groups of women (i.e. rural women) are more disadvantaged than younger, more literate or wealthier urban women.

The fact that information is power, and that women constitute more than half of the population in most African countries, necessitates the need to prioritize actions needed to help women have access to information (Solange and Momo, 2005:6). According to the two authors, these actions require an area study before any project that involves ICTs is implemented. This enables the collection of socio-economic data and the identification of information requirements (education, family planning, legal matters, etc.). Another point to consider is the fact that interventions must be designed to reach their target beneficiaries, i.e. the poor rural woman (World Bank, 2002:4-5). According to the World Bank, “ICT projects that succeed in reducing poverty are generally run by organizations with a proven track record.” To be relevant to poor people, applications must take into account the local languages, be visually oriented, and use voice interfaces.

It is therefore recommended that in order to resolve the cited challenges and increase the ICT opportunities available to rural women, it is important to: involve rural women in deciding which ICTs will add direct and immediate benefit to their lives; sensitize and train communities with regard to the use of ICTs before project implementation; develop more resource centres with the capacity to train communities about ICTs; perform a feasibility study or needs assessment survey before project implementation; assess the gender dynamics/demographics of the community before project implementation (e.g. percentage of women, age groups, occupations etc.); ensure continuous support, such as trouble shooting over the telephone; ensure frequent personal visits; set activities at the pace of the women involved and not the organization’s; identify women with an interest in ICTs, and bring these tools closer to the women; economically empower women, as most rural women are breadwinners; create an advanced awareness of the project and its intentions through available media resources; expose and connect women, through the use of ICTs, to what other women are doing worldwide; and link rural women to micro finance institutions.
REFERENCES


Challenges and opportunities facing ICT and rural development initiatives amongst South African and Kenyan rural women

http://www.researchictafrica.net/modules.php?op=modload&name=News&file=article&sid=411

http://www.idrc.ca/openebooks/189-2/


http://www.sangonet.org.za/snsite


analysis IDP.pdf Accessed 10/12/05

http://www.undp.org/oe/documents/essentials_5.PDF


The Teaching and Learning of Information Ethics in Library and Information Science Departments/Schools: a Literature Review

Sipho Nd wandwe44 - (ndwandwe_finest@yahoo.com)
Department of Library and Information Science
University of Zululand
South Africa

Abstract

The article reviews literature on information ethics, particularly the learning and teaching of information ethics in Library and Information Science departments and schools with the aim of looking at what others have done in the field of information ethics. The article looks at the ethical problems facing information professionals, the need for education, and the content and the challenges associated with the teaching and learning of information ethics in Library and Information Science departments and schools. It is also the aim of the article to unearth the quest of who should teach information ethics, i.e., should it be taught by someone trained in philosophy, or by someone in the Library and Information Science profession?

Introduction

While information ethics has grown over the years as a discipline in Library and Information Science, the field or phrase has evolved and been embraced by many other disciplines (Froehlich 2004:1). Froehlich observes that information ethics can now be seen as a confluence of the ethical concerns of Media, Journalism, Library and Information Science, Computer Ethics, Management Information Systems, Business, and the Internet. This paper looks at information ethics as a discipline in Library and Information Science. Floridi (1999) explains that information ethics deals with, among other things, the respect given to information when it is generated, processed, transferred, and most importantly, when it is used. He further points out that information ethics is said to provide a critical framework for considering moral issues concerning information privacy, moral agency, and new environmental issues (particularly how agents should behave in the infosphere, or problems arising from the life cycle - creation, collection, recording, distribution, processing, etc) of information, especially ownership and copyright. From this, it can be drawn that information ethics functions within the following contexts: privacy, intellectual property, accessibility, censorship, security, and intellectual freedom.

Chuang and Chen (1999: 3) believe that information ethics is an aspect of a much larger philosophy, known as social ethics. They observe that it deals with the moral conduct of information users based on their responsibility and their accountability. Chuang and Chen (1993:4) opine that as free moral agents, individuals and organizations ought to be responsible for the actions they take, and societies should be held accountable for the consequences of their actions.

According to Fallis (2005: 8), information ethics is concerned with the question of who should have access to what information. He states that the core issues of information ethics include intellectual freedom, equitable access to information, information privacy, and intellectual

44 Sipho Nd wandwe is a Masters student in the Department of Library and Information Science, University of Zululand
property. Fallis believes that some of the ethical dilemmas faced by information professionals have arisen due to advances in information technology. Even those ethical dilemmas that involve new information technology (e.g., whether to use internet filters) are clearly special cases of much broader issues in information ethics (such as intellectual freedom). He believes that the ethics of information technology (computer ethics) is only a small part of information ethics.

**Issues of Information Ethics**

Information ethics has been broadly subdivided by Holmer (nd: 2) and Eining and Lee (1997:4) into four fields, namely access, intellectual property, privacy, and accuracy.

**Privacy**

Access to private and personal information poses serious ethical questions with regard to the right to privacy. In order to understand the nature of these ethical questions, it is important to define the nature of privacy. Britz (1996:98) emphasizes the concept of solitude, and defines privacy as a right to be left alone. Parent (as cited by Doss and Loui) in Holmer (n.d:2), however, is of the opinion that this definition of privacy is not adequate. He feels that the right to be left alone is not sufficient, as there are many other ways to annoy, harass, or harm someone that have nothing to do with privacy (in the context of being left alone). Parent in Holmer (nd: 2) thus proposes a new definition: “privacy is the condition of not having made public undocumented, unpublished, factual, personal knowledge that most people would not want publicized”. According to Doss and Loui in Holmer (nd), privacy has three separate elements, namely: secrecy, anonymity and solitude. He believes that secrecy requires limits on the disclosure of personal information. Anonymity is the absence of unwanted information, and solitude refers to the lack of close physical proximity to others. Mason in Eining and Lee (1997:20) identifies two issues that threaten privacy, i.e., the growth of information technology and the increased value of information in decision making. They believe that while current IT allows companies and governments to collect large amounts of information on individuals, the speed of retrieval and the transmission of this information threatens information security. A second, and more insidious threat, is the increased value of information in decision-making processes. Information is increasingly valuable to policy makers: they covet it, even if acquiring it invades another’s privacy. The two authors assert that the ethical concern arises from the need to balance the requirement for information for decision making with the concern for the privacy of individuals. According to Eining and Lee (1997:23), the questions which arise from the issue of privacy include, among others: What information should one be required to divulge about one’s self to others, and under what conditions? And what information should one be able to keep strictly to one’s self?

**Access**

Access to information is about the right to access, use, impart or express information without any restriction or prohibition. Eining and Lee (1997:6) state that access is concerned with the ability to obtain information that is available. They further explain that access requires both the physical technology and the skills necessary to use that technology. Britz (1996:95) is of the opinion that the ethical issue of access to information, centers on the individual right to have access to certain categories of information. The author believes that the right of access is regarded as an instrumental human right in so far as it allows a person to exercise his or her own basic human right. Britz further explains that this right of access to information is recognized and judicially protected by most democratic societies. In South Africa, the right of access to information is protected by the constitution of the Republic of South Africa, act 108 of 1996. However, this right of access to information is violated when people are precluded access to information which is of value to them. It is worth noting that advances in information technology have increased the amount of information available for decision making, but these advances have not insured that everyone has equal access to this resource.
(Eining and Lee, 1997:6). The authors believe that the skills and equipment required for
access are often costly and not necessarily universally affordable. Mason (1986) argues that
inequality may have been created by information access, as power is often distributed to
people that have access to information and the ability to use that information.

Accuracy
The Oxford English Dictionary in Holmer (nd: 3) defines accuracy as concerned with the
truth. Thus when a message is inaccurate, it does not confirm the truth, and this has the
potential to create serious ethical and legal problems. It is undeniable that information has
the capacity to unfavorably complicate people’s lives, especially when the information upon
which lives depend is inaccurate (Mason, 1986). The author believes that the main questions
arising from the ethical issue of accuracy are: Who is responsible for the authenticity, fidelity
and accuracy of information? Who is to be held accountable for errors in information? And
how is the injured party to be made whole? Britz (1996:78) believes that technology has a
great impact on quality, especially with specific reference to the accuracy of information. This
also applies, among others, to the gathering and processing of information. Technology, for
example, is increasingly used to assist human observation, and is regarded as a more
dependable and truthful observer. Britz (1996) is, however, of the opinion that the
widespread assumption that technology is always right does not take into account the
domino effect that comes into operation when a computer multiplies “one hundred percent
correctly” a string of factual and other errors in a document. This potentially has widespread
implications on the handling of a person’s private and other personal information, and is of
special relevance in cases where important decisions are based on technology-generated
information, which could be inaccurate and thus not true.

Intellectual Property
According to Britz (1996:36), the ethical issue of property can be defined as any tangible
matter over which a person can exercise certain rights, such as using, enjoying, and
excluding other people from a possession. Copyright is one of a number of examples of
intellectual property. Cornish (2004:1), Flint (1979:6), and Cornish (1989:245) define the
term copyright as a body of legal rights that protects creative works from being reproduced,
performed, or disseminated by others without permission. The owner of the copyright has the
exclusive right to reproduce a protected work: to prepare derivative works that only slightly
change the protected work: to sell or lend copies of the protected work to the public: to
perform protected works in public for profit: and to display copyrighted works publicly
(Cornish, 2004:2). Britz (1996) is of the opinion that the question of the ownership of
information and the protection of the author’s interest is becoming increasingly blurred and
threatened by technology. This is mainly because technology enables information to be copied
and disseminated faster and easier than ever before, without the recognition of the original
author. Mason (1986:4) suggests that information has some unique characteristics that
create catastrophic problems with regard to the issue of intellectual property. He believes
that the fact that information is sharable and ownership still retained, poses a question of
whether information can, in fact, be stolen. Furthermore, information can be extremely
expensive to produce in the first place. Yet, once it is produced, that information has the
illusory quality of being easy to reproduce and to share with others. Moreover, this
replication can take place without destroying the original.

Ethical Dilemmas Facing Information Professionals
According to Fallis (2005:13), information professionals play an extremely important role in
society, as their mission includes gathering, processing, distributing, providing access, and
using information. He believes that just like lawyers, doctors, and other professionals, they
need to carry out their duties in an ethical manner, and like these other professionals, they
regularly face ethical problems. Some of the ethical problems faced by information professionals in a library environment, as observed by Fallis (2005:14), include the following:
1. Should they put internet filters on all computers in the library?
2. Should they tell the law enforcement officers investigating potential terrorists what a particular person has checked out?
3. Should they add books donated by a racist organization to the library collection?
4. Should they allow a homeless person that smells very bad to use the library?
5. Should they include Holocaust denial literature in the library collection?
6. Should they charge for specialized information services in a public library?
7. Should they put a warning label on an encyclopedia that contains clearly inaccurate information?

What can be noted from these dilemmas is that they are all elements of the issues of information ethics already discussed, i.e. the issues of privacy, accuracy, intellectual property and access. According to Hannabus (1996:3), despite the ethical dilemmas facing information professionals, they are still obliged by society to provide accurate and reliable information; maintain a confidential relationship with their clients; observe and encourage respect for the intellectual property rights connected to information products; and ensure equitable access to information. Fallis (2005:12) proposes that some of the ethical dilemmas faced by information professionals have arisen because of the advances in information technology. He warns though, that information ethics is not just about the problems of information technology, but rather that information technology only forms a small part of information ethics. According to the author, all these problems facing information professionals fall within the scope of information ethics.

The need for education
According to Fallis (2005:1), given the ethical dilemmas facing information professionals, they need additional exposure to information ethics. He observes that just as there is business ethics for business students and medical ethics for medical students, information ethics should be part of the education of library and information professionals. As Woodward in Fallis (2005) forcefully argues, in order to deal effectively with these ethical dilemmas, library professionals need to be able to engage in ethical reasoning. In particular, since these ethical dilemmas fall within the scope of information ethics, library professionals need to have a good working knowledge of information ethics.

Carbo and Almago (2001), for example, argued about the importance of information ethics courses in library and information science. They also described the history of one of the earliest information ethics courses (at the University of Pittsburg, USA). According to the two authors, many of the information professionals who had taken such courses reported that they have been extremely beneficial. Despite the importance of the topic, there are relatively few courses on information ethics for library and information science professionals (Fallis 2005; Smith 2002). Buchanan did a survey on the information ethics courses offered by Library and Information Science programs in the United States (Fallis, 2005). The study found that less than half of the American Library Association accredited programs offered such courses, and only a few of these courses required students to take a course on information ethics. In most Library and Information Science programs, the report notes, ethical issues were only covered briefly within the course of other topics, such as collection management, information policy, and information literacy.

Why Teach Information Ethics
The mandate of information ethics education is the urgency of issues in global information justice (Smith, 2002:3). The author believes that threats to information access, accuracy, and privacy, and matters relating to the digital divide and alternative technologies, demand immediate attention and provide the rationale for teaching information ethics. In order to deal effectively with their ethical dilemmas, library and information science professionals
must have a good knowledge of information ethics (Fallis, 2005). The author believes that courses in information ethics must be part of the education of information professionals. Such courses should provide information and library professionals with an understanding of ethical theories and how they can apply them to concrete practical cases. Such courses should also make explicit the connection between information ethics and the mission of information professionals (Fallis, 2005).

According to Carbo and Almago (2001:3) knowing how to create, find, manage, access, preserve, and use information effectively, provides a form of power to information professionals, as well as those who rely on them to provide a wide array of services. These services help people work more effectively, compete with others, or improve the quality of their lives, and information professionals must recognize that with this power comes responsibility. They further observe that librarians and other information professionals must learn to understand the responsibilities and real consequences of their actions, and learn to use their power ethically and responsibly. The two authors believe that individuals seeking to become professional librarians or archivists, or seeking to work in other information related organizations, must first learn to develop and hone their individual sense of ethics, live an ethical life, and be educated about the ethical issues of information. In addition, information professionals must learn and be ready to make ethical decisions and take ethical actions.

Smith (2002:3) provides a list of reasons as to why students in Library and Information Science should learn information ethics. She believes that information professionals should study information ethics to develop a professional perspective that guides them towards personal integrity and social responsibility in the work place and in their participation in broader society; and appreciate the global dimensions of ethical, legal, and cultural issues. The Information Ethics Special Interest Group (2007:2) observes that knowledge and an understanding of pluralistic intercultural information ethical theories and concepts (including the ethical conflicts and responsibilities facing library and information professionals around the world) are necessary to relevant teaching, learning, and reflection in the field of library and information studies and information-related professions. It further states that many important areas and issues currently facing library and information professionals can only be understood in light of their ethical contexts. Also, the contributions that library and information studies can make to knowledge societies can be significantly informed by their attention to information ethics. The Information Ethics Special Interest Group of the Association for Library and Information Science Education strongly advocates that information ethics be encouraged as an important aspect of education, research, scholarship, service, and practice in library and information studies and in other related professions. It therefore advocates that attention to information ethics (either through the curriculum, instructor expertise, resources, or symposia) be developed and enhanced in all programs of library and information studies education. Fallis (2005) adds that there is a reason why it is especially important for library professionals to have an understanding of information ethics. He believes that how library professionals respond to their ethical dilemmas directly affects their ability to carry out their mission.

The Content

Carbo (2005:28) observes that the topic of information ethics is far too complex to suggest what should be taught. According to the author, some of the areas or questions to be considered in selecting the appropriate content for an information ethics course include the following: How much of the course should be devoted to ethical foundations? How should practical and theoretical knowledge be balanced? What key issues should be discussed? What multicultural content should be included? And how many materials should be included for each course?
The Information Ethics Special Interest Group (2007:5) states that the content of an information ethics course should enable students to: recognize and articulate ethical conflicts in the information field; inculcate a sense of responsibility with regard to the consequences of individual and collective interactions in the information field; provide the foundations for intercultural dialogue through the recognition of different kinds of information cultures and values; provide basic knowledge about ethical theories and concepts and about their relevance to everyday information work; and learn to reflect ethically and think critically and carry these abilities into their professional life.

With regard to the actual content or areas to be covered in the course, The Information Ethics Special Interest Group (2007:5) notes that the content should encompass areas such as: intellectual freedom; intellectual property; open access; preservation; balance in collections; fair use; surveillance; cultural destruction; censorship; cognitive capitalism; imposed technologies; public access to government information; privatization; information rights; academic freedom; workplace speech; systemic racism; international relations; impermanent access to purchased electronic records; general agreements on trade and services (GATS) and trade related aspects of intellectual property rights (TRIPS); serving the poor, homeless, and people living on fixed incomes; anonymity, privacy, and confidentiality; human security; national security policies; the global tightening of information and border controls; trans-border data flow; and information poverty.

Laudon and Laudon, and O'Brien in Lee and Chen (2005:2) suggest that an information ethics course should cover the following broad areas: relationship between ethics, social, and political issues in information society; moral dimensions of the information age; basic concepts of responsibility, accountability, and liability; professional codes of conduct; ethical guidelines, information rights and privacy; property rights - intellectual property, accountability, liability, and control systems quality, legal issues in ethics; privacy laws; technology ethics; and computer crime. What is noted from these content areas is that they all fall within the broad areas of information already highlighted i.e. privacy, access, accuracy and intellectual property. However, the inclusion of ethical theories in the content of the course raises interesting questions, such as who should, in fact, teach the course.

**Who Should Teach Information Ethics**

Among the issues to be considered in deciding who should teach information, as Carbo (2005:27) suggests, is what knowledge and experience (and in what subject areas, such as philosophy, library and information science, or computer science, etc.) are needed to teach an information ethics course. Fallis (2005:7) believes that the course should be taught by library and information professionals who have actually faced some of these ethical dilemmas, and not by philosophers trained in applied ethics. He supports his statement by stating that it is imperative that these courses be taught by someone who understands the ethical dilemmas facing information professionals. He does believe, however, that in order for someone to teach, the person must have knowledge in areas such as philosophy and be familiar with the ethical theories and their application to ethical dilemmas facing information and library professionals. The Information Ethics Interest Group concurs with Fallis’ view by stating that the course should be taught by a qualified member of the Department.

**What Methods should be used to teach Information Ethics?**

Lee and Chen (2005:4) observe that the purpose of information ethics education is to make students understand the importance of ethics and its consequences, and thus generally comprises moral development. They do, however, note that moral development is a complex construct that consists of cognition, affect, and socialization. Therefore, they believe the teaching methods that are suitable for facilitating ethical development in students are those
methods that attend to the students’ cognitive, affective, and social development. Some of the
teaching methods that are likely to allow or enable such development include: case studies,
team education, group discussion, and role modeling (Lee and Chen, 2005:4 and Fallis, 2005).
Lee and Chen (2005:4) caution that while these teaching methods are better suited to
teaching ethics, ultimately the responsibility of how these teaching tools are used depends on
the instructor. In other words, it is possible to utilize a case study or a group discussion in a
way that does not attend to students cognitive, affective, and/or social development. What,
then, are the ways through which an instructor should use such teaching tools so that
students’ ethical development is holistically addressed?

Lee and Chen (2005) believe that the teaching tools for teaching information ethics (case
studies, team education, group discussion, and role modeling) should be facilitated in a
manner that allows students to understand wholes, their constituent parts, and relationships
therein. They believe that deriving meaning from experience requires that students be
afforded an opportunity to grapple with isolated parts, construct a framework (or whole) that
binds together or unites, in some way, these constituent parts, only to have the framework
challenged by new facts or information. As students work through these part-whole, whole-
part evolving relationships, they are fraught with the tension that accompanies most change.
It is in this tension and uncertainty where the greatest amount of experience is being gained
and also where the ethical development is in fact occurring (Lee and Chen 2005).

To whom should Information Ethics be taught?

Carbo (2005:27) believes that information ethics should be expanded to become a component
of information literacy programs for all students, beginning in the elementary undergraduate
curricula, to advanced education programs. In addition, Carbo believes that much more
continuous education programs for information ethics are needed for practitioners, not only
information professionals, but for those in other disciplines (similar to work on health–
related information underway in medical education programs). This would include teaching
the teacher, those who will work in elementary and secondary education, and those
designing, managing and building information systems and services. In addition to students
taking information ethics courses, many other students should take courses that have an
information ethics component to them (Carbo, 2005:27).

Challenges of Teaching Information Ethics

Carbo and Almagno (2005:1) point out that teaching information ethics to a very diverse
group of graduate students working towards careers as information professionals raises a
number of challenges. They mention that students may come from different disciplines and a
wide range of diverse educational, economic, social, and cultural backgrounds, and/or from
several different countries. Carbo explains the challenges she faces when teaching
information ethics at the University of Pittsburg (USA). She notes that recognizing that
students learn in different ways and come from different backgrounds means that a wide
range of teaching and learning styles should be used, and if possible, customized approaches
should be developed for different students. In her report, she notes that for example,
students from cultures that do not permit or encourage questioning the instructor or
challenging ideas, often have difficulty participating in an information ethics course. She
attributes this to the fact that information ethics courses are based on case studies and
discussions whereby students are encouraged to challenge certain views.
Proposed Model for Teaching Information Ethics

Crowell (nd) proposes a model to teach information ethics based on moral psychology. The model has four components, which include ethical sensitivity, ethical judgment, ethical motivation, and ethical action.

**Ethical sensitivity** involves perceiving the relevant elements in a situation and constructing an interpretation of those elements. This first component also includes considering what actions are possible, and who and what might be affected by each possible action. **Ethical judgment** relates to reasoning about the possible action, determining what is moral or ethical, and how the involved parties might react to possible outcomes.

**Ethical motivation** involves prioritizing what is considered to be the most moral or ethical action over all others, and being intent upon following that course.

**Ethical action** combines the strength of will with the social and psychological skills necessary to carry out the intended requisite skills that may arise.

Conclusions

Through this review, it became apparent that information professionals regularly face ethical dilemmas that fall within the scope of information ethics. The review of literature was useful in identifying the ethical problems faced by information professionals, and providing a rationale for information ethics education in library and information science departments. The rationale was based on the urgency of issues in global information justice, such as threats to information access, accuracy, and privacy, and matters relating to the digital divide and alternative technologies. In as much as the review was helpful, there were, however, some inconsistencies, gaps and contradictions. In terms of gaps, a study conducted by Buchanan (2004) on the information ethics courses offered by Library and Information Science programs in the United States revealed that less than half of the American Library Association accredited programs offered such courses, and only a few of these courses required students to take a course on information ethics. There was, however, no such literature found that reflected on what is going on within the African context.

In terms of contradictions, it was noted by Fallis (2005) that an information ethics course should give library and information professionals an understanding of ethical theories, yet the course should be taught by library and information science professionals. Ethics is an area of philosophy, and what is not clear is how much of the philosophical content these library and information professionals should possess. Moreover, most of the issues in this review have been presented as questions with no solutions. This is due to the nature of the concepts involved, i.e. information ethics, privacy, accuracy, property and access. The questions include, among others: What information should one be required to divulge about one’s self to others, and under what conditions? What information should one be able to keep strictly to one’s self? Who is responsible for the authenticity, fidelity and accuracy of information? Who is to be held accountable for errors in information? And who should have access to what information? Given the scope of this review, it did not further investigate the above mentioned questions. Further investigation, possible reflecting on what is going on within the African context on these questions is consequently recommended.
References


Holmer, Marlene (nd), Techno-ethical issues of electronic mail, Journal of Library and Information Science Available online at: Search/Epnet

147


A comparative analysis of web information seeking behavior among students and staff at the University of Zululand and Durban University of Technology: A Literature Review

Ntando Nkomo45 (nkomontando@yahoo.co.uk)
Department of Library and Information Science
University of Zululand
South Africa

Abstract
This paper reviews literature on the web information seeking behaviour of students and staff at the University of Zululand and Durban University of Technology. Seeing as information services delivered via the World Wide Web continue to significantly permeate the work and leisure spaces of students and staff at institutions of higher learning, it is of paramount importance that higher education institutions understand the web’s impact on information seeking behaviour. The aim of the study was to comprehensively understand web information seeking behavior in order to serve as a theoretical and professional base for user-centered service and system designs. An attempt was made to identify a range of web information seeking/searching behaviours inherent in the higher education environment.

The literature review seeks to obtain answers to the following questions: what is web information seeking behaviour, how is it manifested, channels used, challenges faced, and the nature of information sought, with particular reference to higher education.

Keywords: Information seeking, Information seeking behaviour, Web information seeking/behaviour, User behaviour, Higher education.

Introduction
This paper reviews literature on web information seeking behaviour in academic institutions. By definition, a literature review is an account of what has been published on a topic by accredited scholars and researchers (Taylor and Proctor, 2006: 1). In brief, the following issues are discussed below: what web information seeking/behavior is, how it is manifested, channels used, challenges faced, and the nature of information sought, with a particular emphasis on higher education. Sources consulted for the review of literature included books, articles, theses, reports, conference literature and reviews.

Institutional Background
For a long time, South Africa maintained disparate higher education systems organized along racial lines, with vastly inferior institutions catering for black students. Through a series of mergers and incorporations, the higher education sector was transformed, and as a result, there are now three types of public higher education institutions in South Africa: traditional universities, universities of technology and comprehensive universities (Sedgwick, 2004: n.p). Two examples of the education systems mentioned above are discussed, namely the University of Zululand and Durban University of Technology (DUT), a

45 Ntando Nkomo is a masters student in the Department of Library and Information Science, University of Zululand, South Africa
comprehensive university and a university of technology respectively. The former is rural while the latter is urban based.

University of Zululand
The University of Zululand was established in 1960. It is a comprehensive institution of higher learning comprised mainly of students from the surrounding rural communities of KwaZulu Natal. Programs are offered within four faculties, namely Arts, Commerce, Administration and Law, Education and Theology, and Science and Agriculture. It is situated in KwaDlangezwa, about 145km north of Durban and 19km south of Empangeni near the N2 National road of KwaZulu Natal (University Calendar: 2004)

Durban University of Technology
The Durban University of Technology (DUT) arose from a merger between Technikon Natal and ML Sultan Technikon in 2002. The Durban University of Technology offers a variety of full-time and part-time programmes, which in turn lead to a number of tertiary qualifications. These range from certificate courses (one year full-time study) to National Diplomas (three years of full-time study), Bachelors, Masters, and Doctorate degrees. DUT has a number of campuses - Durban City, Berea (Steve Biko and ML Sultan, Ritson Road, Brickfield Road), Indumiso (on the outskirts of Pietermaritzburg), Pietermaritzburg and Richards Bay.

Over the last few decades, the growth and relevance of information has dramatically increased a development that can be attributed to the prevalence of new information and communication technologies, as typified by the web. The rapid rate of change in the academic sector has resulted in a wide variety and range of information sources. The advent of the World Wide Web has ensured that these sources are now collated in one medium. For instance, whereas in the past the physical library represented a one-stop shop for information, today this is no longer the case, and in its wake, the web has taken over. Patitungkho and Deshpande (2001: n.p) claim that the insurmountable amount of information available on the web has affected information seeking behavior

Today, there is no doubt of the effect the Internet has had on the information seeking patterns of members of staff and students in institutions of higher education. What’s more, this has become a central consideration in the provision of information services. Indeed, as the number of available web information retrieval systems and their use is proliferating, knowledge and the understanding of users' information seeking behaviour has become increasingly significant. As suggested by Bains (1997: n.p), rapid technological developments in the higher-education sector have resulted in a greater reliance on end-user searching. Rowley et al (n.d: 29) report that the impact of IT networks and electronic information services on academic information services is potentially enormous, and permeates all areas of research, teaching, publishing and communication. This change, provoked by the emergence of electronic information services (EIS), is only one of many changes taking place in higher education which affects the nature of academic jobs and roles, research and knowledge, student profiles and learning.

Siatri (1998: n.p) observes that taking into account the constant development in the provision of recent electronic systems, misunderstanding information seeking behavior is an obstacle to the process of interpreting the way in which electronic information services are being delivered. Carr (2006: n.p) insists that the emergence of information resources in electronic form and the advent and pervasive dominance of the Internet, serve further to accelerate this new and welcome emphasis on giving prominence to the needs of users. As services delivered on the web continue to considerably permeate the work and leisure spaces of students and

150
staff in institutions of higher learning, understanding the web’s influence on behavior has become highly fundamental.

**Rationale for the study**

Integrating user-centered information seeking support into the design of web information services has for long been the aim of user studies. This study is no different; however, it endeavours to holistically mirror how web information seeking behaviour has affected the South African educational landscape. This is because as Eklundh (2001: 4) notes, in the growing literature on the Internet and the Web, there is a notable lack of empirical research about how people actually use these media in their daily activities. As observed, many of the existing studies on web information seeking and use are quantitative, whereas qualitative studies related to a specific work context are hard to find. Cockburn, A. & Mackenzie, B. (2000) also lament that given the predominance of the WWW in everyday computing, there is a surprising lack of research on how the web is used. This study is an attempt to fill the noted gap. Jansen and Pooch (2000: 244) also believe that despite the fact that the web is a unique searching environment that necessitates further and independent study, web information seeking research still suffers from the lack of a consistent methodological approach. A plethora of different approaches have been followed, the majority of which are characterized by inconsistencies and limitations. Kellar, Watters and Shepherd (2006: 2) maintain that although a large body of theoretical research examining information seeking in both electronic and non-electronic environments exists, information seeking on the web is a newer branch of research that differs from library based information seeking in the complexity of the resources and the tools used. Mansourian and Madden (2006: 90) contend that information seeking on the worldwide web provides, for an ever increasing group of people, a means of accessing diverse sources of information. To this end, a study examining information-seeking behavior on the World Wide Web in the higher education sector is warranted. Fourie (2006: 20) also maintains that research on user needs and an analysis of user requirements is vital in order to increase the acceptance of web information services, while Kebede (n.d: 157) argues that as the electronic information environment is rapidly expanding, the need to determine the information needs of users in the new environment should also receive due attention.

**Information Seeking Terminology**

Reiterer, Mußler and Mann (n.d: 2) emphasize that one of the first steps taken when dealing with information seeking systems is to get an idea of how to describe the information seeking process best. This stems out of the realization that information seeking, information-seeking behaviour or information behaviour are terms often used synonymously for all aspects of the process of human information seeking. In any case, variations in the definitions of the terms applied in the study of information seeking are proving an impediment to understanding what happens when people go online to communicate and/or retrieve information. It should also be borne in mind that as observed by the Web Information Seeking and Interaction Workshop (2007: n.p), web information seeking and interaction (i.e., the interaction of users with web-based content and applications during information-seeking activities) is a topic that unites many strands of academic and commercial research, from studies of information-seeking behaviour to the design and construction of large-scale interactive systems; hence this complexity and diversity in arriving at serviceable definitions.

The following terms/concepts: information seeking, information seeking behaviour and the World Wide Web, are defined. These terms generally have a widespread understanding amongst librarians and those in the information profession. Some of the applicable definitions are listed below.
Information seeking

Kingrey (2002: n.p) says that “The term information seeking often serves as an umbrella overarching a set of related concepts and issues. In the library world, discussions of database construction and management, community information needs, reference services, and many other topics resonate with the term. Yet, a single, serviceable definition remains elusive.”

Kingrey (2002: n.p) further states that “Like any other complex concept, information seeking means different things in different contexts. In the simplest terms, information seeking involves the search, retrieval, recognition, and application of meaningful content. This search may be explicit or implicit, the retrieval may be the result of specific strategies or serendipity, the resulting information may be embraced or rejected, the entire experience may be carried through to a logical conclusion or aborted in midstream, and there may be a million other potential results.”

Another definition of the information seeking process is provided by Lallimo, Lakkala and Paavola (2004: 2), who state that information seeking is a term used widely in information sciences to encompass the entire process, from recognizing the need for information, to finding and using it. The process focuses on the interaction between the information seeker and information resources. It is a cyclic or iterative process by nature, and involves more than simply gathering information. Thus, it also encompasses posing and identifying the question, exploring available information, coming back to refine the question, gathering and evaluating further information, and synthesizing and using it. This cyclic process of gathering, sorting, evaluating, and refining may be carried out a number of times.

According to Lines (2003: n.p), information-seeking research looks at how individuals go about finding the materials that they need in order to satisfy informational needs, both professionally and recreationally. Nel (n.d: 24) echoes the aforementioned views, stating that information seeking is always embedded in the larger tasks of work, learning and play. Of similar thought is the University Of Michigan School of Information, Information Seeking Behavior’s Instructor Rieh (2004: n.p) who says “Information seeking is a complex information and communication activity requiring access to diverse information systems and resources in order to deal with work-related, personal, and social information problems.”

Taylor and Proctor (2006: 1) strip information seeking down to the ability to scan literature efficiently, using manual or computerized methods, in order to identify a set of useful articles and books. Affirming Taylor and Proctor’s assertions, Kari and Savolainen (2003: 163) state that information seeking manifests itself in the doer’s looking for and consulting information sources.

Kakai, Ikoja–Odongo and Kigongo–Bukenya (2004: n.p) purport that information seeking is a basic activity indulged in by all people and manifested through a particular behavior. Nel (n.d: 25) defines information seeking as a process in which humans engage in order to purposefully change their state of knowledge, while Kari and Savolainen (2001: 5) perceive information seeking as a purposive process in which the individual attempts to find information through information sources in order to satisfy his/her information needs. Wiberley, in Kakai, Ikoja–Odongo and Kigongo–Bukenya (2004: n.p), regards it as an aspect of scholarly work of most interest to academic librarians who strive to develop collections, services, and organizational structures that facilitate information seeking. Choo, Detlor and Turnbull (2000: 14) note that purposive information seeking focuses on the perceptions and behaviours that lead to information being found, including the identification, selection and use of information services. Case (2002:5) postulates that information seeking is a conscious effort made to acquire information in response to a need or gap in one’s knowledge.
The underlying issues resonating from the above definitions are that information seeking is a process or activity that involves the consultation of sources. These sources can be manual or computerized, and seeking is often the behaviour, pattern or way one goes about consulting these sources. Reasons as to why people engage in information seeking vary, ranging from personal, to professional or recreational. The statement below by Cheng and Shaw (1999: n.p) succinctly sums up our fascination with information seeking, “Information seeking is an important activity in our daily lives. We look for information for different purposes, in many situations: we develop a variety of behaviors to encounter, seek, comprehend and use information. Approaches to information occur in different situations and in response to a wide array of needs, wants and desires. Not surprisingly, information seeking has been the subject of much research in library and information science, in addition to fields as diverse as business, public administration, market research, management, consumer research, medical informatics, health sciences, communication and psychology of personality.”

Information seeking behaviour
A plethora of studies and articles have been conducted examining various factors that affect information seeking behavior. These studies range from an examination of information-seeking behavior phenomena, to profiling the information-seeking behavior of a specific group of individuals. The dilemma scholars face in defining information seeking behaviour is articulated well by Case (2002: 5), who states that information seeking behaviour is a phenomenon that often defies generalization, usually escapes observation, and is difficult to generalize because it is a behaviour that varies so much across people, situations, and objects of interest; and so much of it takes place in a person’s head.

Fairer–Wessels, in Kakai, Ikoja–Odongo and Kigongo–Bukunya (2004: n.p), believes that information seeking behavior refers to the way people search for and utilize information. This process involves the reasons for seeking information, the kind of information being sought, and the ways and sources with which the required information is being sought (Patitungkho and Deshpande, 2001: n.p).

According to Wilson (2000: 1) “Information Seeking Behaviour is the purposive seeking for information as a consequence of a need to satisfy some goal. In the course of seeking, the individual may interact with manual information systems (such as a newspaper or a library), or with computer-based systems (such as the World Wide Web).” Wilson perceives information seeking behavior as the ‘micro-level’ of behavior employed by the searcher in interacting with information systems of all kinds, consisting of all the interactions with the system, whether at the level of human–computer interaction (for example, the use of a mouse) or at the intellectual level (for example, adopting a Boolean search strategy or determining the criteria for deciding which of two books selected from adjacent places on a library shelf is most useful), which in turn also involves mental acts, such as judging the relevance of the data or information retrieved. Information seeking behavior is expressed in various forms, from reading printed material, to research and experimentation.

World Wide Web and information seeking
The World Wide Web, or simply the web, is the premier Internet application that has made the Internet accessible to millions of people, from children to senior citizens. It is a remarkably easy to work with application that integrates resources from other Internet applications (Lehnert, 2001: 37). Kim (2001: 234) regards the World Wide Web (Web) as a hypermedia-based information system combined with telecommunication technologies. It has become one of the most widely used information systems, allowing flexible presentation of, and seemingly limitless access to, information. It is a very popular medium of information seeking, made even more dramatic by the degree to which it enables the creation and dissemination of primary information sources. The web has engendered a feverish rush for its adoption by different individuals with different needs. Regardless of their backgrounds,
characteristics, and information needs, an increasing number of individuals have become frequent web users. Lee et al. (1999: n.p.) is of the opinion that the World Wide Web represents a new concept in technology – the library on your desktop, the dictionary at your fingertips, the sound in your ear – and that in future, there is nothing that we hear or see that will not be available through it. Information seeking on the web is part of a broader area of study of information seeking in online resources.

Web information needs and seeking

The World Wide Web wields a tremendous influence on the information seeking behaviour of students and academics today. According to Lehner (2001: 307), the web opened the Internet to the public. Niederlander (n.d.: n.p.) insists that the Internet ‘for better or worse’ has had a definite impact on how people seek information, and what their "expectations" are of the "Internet" in filling their information needs. A growing number of people today feel the web is the answer to all of our questions. Lawrence and Miller (2000: 1) notice that purveyors of electronic commerce vigorously promote the notion that the answers to all our questions are only a keystroke away. Judging by the extent of web usage in academia and other fields and its coverage of subjects, one cannot help but feel that their observations are not far off the mark, although some can still argue that not everything is available online.

By connecting to the Internet, an entirely new world of electronic information and communication is opened to students and staff; hence it is conceivable why seeking information on the web is very popular in higher learning. The wide range of information available online now means that many information queries can be answered from online sources. A driving factor in this ballooning interest in web information seeking is speed, or instant information feedback. People demand and receive electronically produced citations, abstracts and sometimes full-text documents in minutes or even seconds after the request is placed. Moreover, users have recognized that online searching provides a fast and efficient entry into the world of secondary source materials and basically eliminates exhaustive manual researching in many subjects. In essence, the lure of the web seems to lie in a combination of factors: it is simple, and its coverage is wide, giving access to a range of topics greater than any other information source.

Mioduser (2000: 7) opines that the reason behind the web’s popularity in education is because of its most obvious feature as a huge repository of hyperlinked knowledge, information and knowledge manipulation functions (e.g., generation, transmission, storage, processing, and retrieval of information), which are at the heart of educational transactions. The ability to contribute to or to access on-line libraries, databases, e-journals, museums, and other public information services on the Internet to fulfill valuable educational functions also appeals to higher education users. On the web, innumerable types of information, in a large variety of packages and in many different locations, are all available in one place. Lawrence and Miller (2000: 30) believe that the Internet has provided exceptional educational opportunities, and an explosion of activity is occurring in this arena, especially with the appearance of the World Wide Web. As Patitungkho and Deshpande (2001: n.p) opine, this increase in the information available on the web has affected information seeking behavior.

Growth and related studies in web information seeking

The process of looking for information on the web is a popular research topic in different fields, including information science and computer science. It has been a focus of inquiry within the library and information science community for decades. In fact, the act of seeking information has been going on for as long as there has been human existence on this earth. Accordingly, a great deal has been documented on the Internet and World Wide Web in higher education.
Spink and Jansen (2004: 21) report that the earliest studies of web information seeking behaviour were conducted during the mid-1990s as web search engine and web browser usage was growing, particularly in academic environments. Early studies were intended to improve collection development, followed by those that explored the research habits of individuals or groups in order to design appropriate systems and services. Choo, Detlor and Turnbull (2000: 15) assert that studies of information seeking by individuals and groups have a long history, whilst studies of the web as an information and communication medium are much younger and have generated tremendous excitement. This is because the web has the potential to reconfigure the way people seek information and use knowledge. Borgman et al (2005: 640) note that research on the information needs and information seeking behavior of academics extends back to the late 1950s, beginning with simple descriptive studies and evolving into discipline specific investigations.

Fourie (2006: 20) reports that in the past few years, there has been a remarkable growth in studies relating to web information seeking behaviour. The phenomenal growth in the size of the web has created a growing body of empirical research investigating many aspects of user interactions with the web (Spink, Bateman and Jansen, 1998: n.p). Notably, web information seeking research predominantly features experimental and comparative studies, user surveys and user traffic studies, especially surveys of web users that are generally library based or distributed by submission to newsgroups. Stenmark & Jadaan (2006: 1) also claim that alongside developments in technology, studies of users’ behaviour when interacting with technology have started gaining momentum and a useful body of knowledge is beginning to grow. Hargittai and Hinnant (n.d: 5) put forward the notion that researchers in library and information science have expanded their perspective on what should be studied in information seeking research, making information seeking itself part of a broader picture, which they call HIB (Human Information Behaviour).

The Internet, and its most common manifestation in the form of the World Wide Web, has made a profound contribution to modern higher education’s ways of seeking information by providing access to a diverse range of information sources and systems. Many nowadays feel that the Internet offers maximum access to information in any field anywhere in the world. It is a rich environment in which students can investigate and collect data because the learning resources of colleges and universities are augmented by the learning resources of the world via the web. Today, a substantial part of the resources accessible by researchers and university students are offered through the World Wide Web, making the supply of easily obtainable information larger than ever. With the development of a wide variety of technologies, the amount of information available to people is growing rapidly. Furthermore, through different channels, this information is diffused in various forms, which accelerates the speed of information growth.

According to Lee et al (1999: n.p), the World Wide Web is one of the most accessible tools available for use in higher education. It is an easy way through which one can publish material, has a low learning curve, the majority of its browsers are graphic and user-friendly, and above all, it is free to most people. An additional feature that the web has brought about is the presentation of data in a connected, dynamic manner. Information that was static, linear, non-modular, and printed is now displayed in a 'live' fashion, linked by hypermedia.

**How, when and where is information sought on the web?**

Several ways have been identified by scholars explaining how users go about the process of seeking information. Kuhlthau (1999:3) suggests that a user goes through a six stage process referred to as initiation, selection, exploration, formulation, collection and presentation; while Choo et al distinguish starting, chaining, browsing, differentiating, monitoring and
extracting. Some information seekers (representing different disciplines or occupations) have shown a change in their preference for information channels depending on their phase of information seeking. There are some who put forward the view that users have generally begun to adopt very different forms of information seeking behaviour as a result of encountering electronic information services such as the Internet and World Wide Web. The SIGIR WISI (Web Information·Seeking and Interaction) Workshop (2007: n.p) claims that the popularity of web browsing and web search engines has given rise to distinct forms of information seeking behaviour, and new styles of interaction.

The infrastructure for web information seeking in educational institutions is usually found in libraries, computer laboratories, and offices. The use of personal computers is also increasing. Moreover, the Internet has become an essential component of every library, allowing it to function as a gateway to vast resources of dispersed information, and thus transforming the way students, scholars and librarians think about collections and service (Lawrence and Miller, 2000: 30). Harris (2005: 6) claims that “For most college students the Internet is a functional tool, one that has greatly changed the way they interact with others and with information as they go about their studies.” Students and staff alike have developed the habit of searching online for information. Most times, this involves active or purposeful information seeking stemming from the need to complete course assignments, prepare for class discussions, seminars, workshops, conferences, write final year research papers, and get news, sports, weather, stocks and teaching material, to name a few. Everyone is becoming familiar or making the effort to become familiar with database searching and access.

In spite of existing mechanisms to educate students in information seeking through information literacy programs (such as library orientations), it is evident in tertiary learning contexts that students and staff appear to find their way on the web through serendipity. Unlike traditional environments, there is no ‘best’ clear cut pattern followed online.

**Channels for web information seeking**

Information housed on the World Wide Web is diverse and presented in numerous formats, such as text, sound and multimedia. This information is made available to users via channels. Fourie (2004: 75) says that although the web can be seen as an information channel that can be used to identify information sources (i.e. as compared to printed channels or people), it can also offer access to a wide selection of what can be referred to as information channels (Notes: it can also....information channels??), e.g. search engines, portals, directories, databases, websites and discussion groups; which can be used to identify information. Other channels/ spaces of information on the web are: library catalogues, full text journal services, document delivery services, current awareness services and intranets.

Challenges faced when seeking information on the web

For all the hype about the World Wide Web and its numerous benefits, there are in fact numerous challenges that users face when seeking information. According to Savolainen (2001: 211), the networked information environment epitomized by the Internet places new demands on people’s competencies in everyday information seeking. As the range of sources and their inherent complexity expands significantly, particularly on the web, information seeking has become considerably complex. It has grown from simple searching or surfing to encompassing numerous tools, such as online public access catalogues, search engines, full text databases, etc. As novice searchers, tertiary students may lack the capacity to make good judgments on the World Wide Web, a vast and often unregulated information medium.

In its objectives, the SIGIR WISI (Web Information·Seeking and Interaction) Workshop (2007: n.p) alludes to the fact that people engaging with this rich network (web) of
information may need to interact with different technologies, interfaces, and information providers in the course of a single search task. The systems may offer different interaction affordances and require users to adapt their information-seeking strategies. Not only is this challenging for users, but it also presents challenges for the designers of interactive systems, who need to make their own system useful and usable to broad user groups. It is noted that the web’s growing support of information seeking, creation, and use for a wide variety of applications in higher education highlights the need for efficient and effective information seeking skills.

Kuhlthau (1999: 1) states that people using a variety of sources of information to learn about a particular subject, complex problem or extensive issue often have difficulty in the early phases of information seeking. This is particularly noticeable with students who have been assigned a research paper, but is not characteristic of students alone. She reiterates that advances in information systems that open access to a vast assortment of resources have not eased the user’s dilemma in many cases, but intensified their sense of confusion and uncertainty. New information systems may deepen the problem by overwhelming the user with everything all at once, rather than offering a few well chosen introductory pieces for initial exploration. The increased availability of non-directed resources on the web (information overload) has increased the need to maintain authoritative content / links.

According to Debowski (2003: 3), the process of information seeking is gradually increasing in sophistication as more services are placed online, and as the capacity of systems to provide extensive information increases. In higher education, this has heightened as students and staff spend increasing amounts of time working with various sorts of web-based electronic information. Walton and Archer (2004: 8) allege that web-searching skills are particularly problematic, given the challenges that the web poses to academic values and traditional research practices. Consequently, the technical skills of web searching are often taught separately from academic curricula or left entirely unaddressed. Leverenz, in Walton and Archer (2004: 8), is of the opinion that online sources challenge conventional academic disciplinary values. He adds that the web turns academic conventions on their head because of the absence of traditional publishing gatekeepers and quality indicators, unclear or collaborative authorship, the absence of dates, and finally, the transience and mutability of online texts in a medium where retrievability is not guaranteed.

Models and theories of information seeking

Scholars within library and information science, as well as those outside the field, have designed several models to demonstrate the phenomenon of information seeking and information seeking behavior. Turnbull (n.d: n.p) states that the influence of new technology on information seeking is also providing a new set of alternative models that more accurately describe the information seeking process (i.e., where it is a dynamic activity). A model of information seeking attempts to describe the process a user follows to satisfy an information need.

A variety of models have been proposed, e.g. by Kuhlthau, Wilson, Ellis and Choo et al, describing the information seeking process. Some of these models will be discussed below.

Wilson in Fourie (2004: 75) says “A model may be described as a framework for thinking about a problem and may evolve into a statement of the relationships among theoretical propositions”. Models can contribute to our understanding of web information seeking behaviour. Fourie (2004: 67) opines that web information seeking studies should benefit from a holistic picture of web information seeking and build on insights gained from information behaviour models, including information and web information seeking behaviour, and research findings in this regard. (Notes: revise) Regrettably, many of the existing
information seeking models do not comprehensively address how information seeking is conducted on the web or in electronic environments. Fourie (2004: 77) asserts that until recently, very few models have been proposed for web information seeking behaviour per se. Fourie (2004:77) observes that in recent literature surveys, Jansen & Pooch (2001) did not identify any such models, while Fourie (2002) identified only the models by Choo et al. (1999, 2000a, 2000b, 2000c) and Tang (2002). There are, however, a few earlier models, namely those of Belkin (cited by Wilson, 1999b), Dervin (1999), Ellis (1989), Ellis et al. (1993), Ellis & Haughan (1997), Ingwerson (1992), Kuhlthau (1991), Saracevic (cited in Wilson, 1999b), Spink (1997) and Wilson (1981, 1999a, 1999b), which have also been applied or acknowledged in web information seeking studies. These models, many of which predate the World Wide Web, are inefficient in addressing how information seeking is done in electronic environments.

Shneiderman, Byrd and Croft in Reiterer, Müßler and Mann (n.d: 2) have also suggested a four phase framework for information seeking, namely: formulation · expressing the search; action · launching the search; review of results · reading messages and outcomes resulting from the search; and refinement · formulating the next step.

Higher education and information seeking

Attfield and Dowell (2002:187) note that research in information science has seen the emergence of a trend, identified by Dervin and Nilan, of exploring the contexts of information seeking and use. A number of key features are characteristic of this approach. These include being receptive to differences that manifest themselves in different information seeking situations, extending the focus of research beyond users’ information system encounters to the wider context of use, exploring user’s cognition as well as observable behaviour, and frequently adopting qualitative methodologies to provide rich accounts of the information behaviour of smaller groups of individuals. According to Limberg & Sundin (2006: n.p) “one important setting for information seeking is that of education. In schools at different levels, from preschools to universities, the various practices of information seeking play a central role”. Mioduser (2000: 8) observes that “The conception of the web as a learning environment is gaining more and more adherents, and is instantiated in varied forms, e.g., distance learning courses and even degrees, collaborative learning projects, virtual schools and universities, or virtual environments for complementary and informal education.”

The academic setting is not a new area for research on information seeking. Information seeking literature reports that higher education is an area where a lot of research has been conducted. This is because much of the work concerning information seeking looks at well defined user groups with well defined information tasks, typified by students or academics. Often, these investigations of information seeking behavior within the academic community across study groups and disciplines focus on the following groups: undergraduates, graduates, staff and/ or researchers: mainly because of the assumption that there are differences in the seeking behaviours of the cited groups.

Today, there seems to be a widespread acknowledgement of the fact that in higher education, there is a lot of information seeking that occurs on the web. A superficial evaluation of literature shows the extent to which web technology and services have already permeated higher education. As Mioduser & Nachmias in Mioduser (2000: 2) observe, since its inception, the development of computer communication technology has been accompanied by attempts to assimilate it into education in pursuit of teaching and learning goals. Mioduser (2002:2) believes that the creation of the first graphic browsers and the WWW in the early 90’s was a crucial turning point that led to the widespread implementation of computer mediated communication in education. The Chronicle of Higher Education (2007: n.p) reports that in
the decade since the release of the first web browser, information technology has insinuated itself into virtually every corner of higher education. Colleges use databases, networks, and a dizzying array of software to maintain academic and financial records, recruit new students, communicate with current students, and enable professors to collaborate during research, disseminate library materials, and teach, whether in a classroom or through distance education.

According to Fok and Ip (2004: n.p), worldwide educational reform has raised the importance of Information and Communication Technology (ICT) in education. Digital information technologies and communication technologies were dubbed information and communication technologies or ICTs because they are environments in which people use communication technology to access, manipulate, transform and exchange information., features that are popular with academic users. (Notes: revise) With the diversity and abundance of information that can be accessed from the Internet, studies of web information seeking behaviour, particularly with regard to education, have become inescapably significant.

Suggestions and recommendations for optimal web information seeking and use within learning environments

The web has grown from a marginal to a pervasive presence in higher education. Since universities work continuously towards the efficient use of resources, the Internet has been a boon to higher education institutions. Information seeking in society is an increasingly critical skill which must be developed throughout the educational experience, with students and staff expected to use a wide range of electronic search tools as they perform their professional roles (Debowski, 2003: 1). The increasing reliance on web-based systems, electronic databases, and knowledge management systems, necessitates the growth of high level search competencies, particularly as more resources are electronically sourced. Seeing as the skills and strategies of using ICT for information seeking differ from using traditional tools (for example, navigation in a hypertext-environment is substantially different from searching a library’s card index or browsing bookshelves), Lallimo, Lakkala, & Paavola (2004: 3) question whether ICTs bring totally new challenges to students’ information seeking skills, or support basic information seeking skills regardless of the technology. For this reason, there is a need to review the mechanisms by which information seeking might be better inculcated in tertiary education curricula. In addition, given that the World Wide Web has greatly encroached onto the higher education landscape, web information seeking should be treated as a core competency that needs to be reflected and integrated more completely into university curricula.

There is a need for infrastructure and policies that would facilitate physical and intellectual access to web information seeking. Commenting on physical ability, Kebede (n.d : 160 ) cited the availability of computing facilities (computer hardware, software, and other electronic information related facilities and equipment, and the space needed to access electronic information sources and content): the availability of electronic information sources (CD-ROM, local and remote electronic databases, the Internet, and other networked information sources): the accessibility of the computing facilities (proximity, policy, and other issues that affect the physical accessibility of the existing computing infrastructure and space): and the accessibility of the electronic information sources (such as access to remote bibliographic databases, which can be said to be incomplete if the full text is unavailable or inaccessible during the actual extraction of potentially relevant information).

Summary and conclusion

Owing to its convenience and the ability to provide access to vast information sources, more and more people have opted to use the web. As observed by O’Brien and Symons (2007: 5), students’ use of search engines reveals that the web is indeed the information tool of choice.
The two authors propose various reasons explaining why students turn to the web, including the availability of library materials, currency, field of study, and inspiration. Since universities work continuously towards the efficient use of resources, the Internet/web has been of great benefit to higher education information seeking processes. In actual fact, the benefits of the World Wide Web and associated technologies have been and continue to be important forces that drive information seeking in higher education. Walton and Archer (2004:2) observe that once most students graduate, their dominant mode of learning will be self-directed and exploratory, and the web will be a key information source. This observation holds true in many academic institutions today and also extends to students who have not graduated, and to members of staff.

Information seeking in society is an increasingly critical skill that must be developed throughout the educational experience. Students and staff are expected to use a wide range of electronic search tools as they perform their professional roles (Debowski, 2003: 1). The ability to critically seek, evaluate and use information and tools for information seeking within different institutions, particularly those of higher education, is a competence that is given increasing importance. Consequently, understanding the information seeking process and developing systems and strategies for supporting it has become central. Moreover, the web's growing support for information seeking, creation, and use, in a wide variety of applications in higher education, highlights the need for efficient and effective skills. Enabling infrastructure should also be made available to improve the efficiency and effectiveness of web information seeking.

In conclusion, one can state that web information seeking is an activity that has been received with much zest in the higher education sector. As indicated above, the benefits of web information seeking are plenty. Technological advancements have also expedited access and the choice of materials available to students and academics.

Bibliography


20. Kebede, G. O Proposed approach to study information needs of users in electronic information environments.
34. Nel, J.G (n.d). The information seeking process: is there a sixth sense?
35. Niederlander, M (n.d: n.p) Library support staff.com resources for on the job libraries: Information Seeking Behavior
the Web: behaviour of Excite users. Information Research, 4 (2) 1998
Publishers
analysis of longitudinal search log data. Available at: http://eprints.rclis.org/archive/00008102/01/dt02.pdf
Available at: http://www.utoronto.ca/writing/pdf/litrev.pdf (Accessed 06· 06· 07)
Web Using Collaborative Filtering Techniques. Available at:
http://www.ischool.utexas.edu/~donturn/research/augmentis.html
web sources in a project-based curriculum. British Journal of Educational Technology
Vol 35 No 2 2004 British Educational Communications and Technology Agency, 2004
Published by Blackwell Publishing Ltd
(Accessed 20-05-07)
ICTs in Secondary Education in the uMhlakuze Municipality: an Investigation into their Utilization, Impact and Challenges by Learners

Mdudzi Ntetha46, (mdudzi_ntetha@yahoo.co.uk)
Department of Library and Information Science
University of Zululand
South Africa

And

Janneke Mostert47 (Jmostert@pan.uzulu.ac.za)
Department of Library and Information Science
University of Zululand
South Africa

Abstract

The purpose of the study was to investigate the utilization of ICTs by staff and learners of high schools in UMhlakuze city. A survey was conducted in all 15 high schools in UMhlakuze and Questionnaires were administered to all of them. It was found that the utilization of ICTs is largely poor due to uncoordinated access to resources, poor planning and poor implementation of ICTs policies and guidelines. It was also found that some ICTs such as cell phones and computers were relatively commonly available at the schools. Access to some ICTs such as Internet, or the computer were however restricted. The study recommends that the department of education should strengthen ICT support to be part of learning strategies. Support and maintenance of especially computer equipment and access to the Internet should be a high priority and the department of educations budgeting allocation to schools, as many schools do not have the means to support these systems. Only data obtained from learners is reported in this paper.

1. Introduction

Education systems worldwide are facing formidable challenges in trying to provide learners with an education that allows them to cope with the demands made on them by today’s information-based global economy. Equipping learners with the necessary knowledge and skills to contribute meaningfully to an ever-evolving marketplace and social environment and to engage in life long learning, has proved a struggle for most educational systems.

Many countries have invested in information and communications technologies (ICTs) as a way to pursue these educational goals. ICTs are generally regarded as technologies that

46 Mdudzi Nietha is a Masters student in the Department of Library and Information Science, University of Zululand.
47 Janneke Mostert is a Senior Lecturer in the Department of Library and Information Science, University of Zululand
support an individual’s ability to manage and communicate information electronically, such as the Internet and e-mail. In most schools, computers and the Internet are seen as the ICT tools that can most enhance the learning process, especially within the context of recording, processing, storing, and sharing information amongst staff members and students.

2. ICTs in South African schools

In 2004, the Department of Education published the White Paper on e-Education, committing themselves to the development of ICT capabilities amongst all school children from Gr. 1 ·12 by 2013 (Department of Education 2004). As it stands, the main goal of this policy is to enable South African learners to “confidently and creatively develop the skills and knowledge they need both to achieve personal and economic goals and to participate effectively as a member of the global community” (Department of Education 2004:18).

Attaining these ideals could prove daunting as the infrastructure that is currently available in schools to support ICTs is insufficient. A 2004 study revealed that less than half of the schools in South Africa had access to electricity (Department of Education 2004:18). The availability of computers in schools was also minimal, with only 26.5% having computers for learning and teaching, and only 59% with access to telephone lines. Taking into account the three prerequisites for telecommunications’ connectivity, i.e. electricity, exchange telephone lines and two or more computers, it was found that only 15% of the schools complied.

Availability and access to computers also varied amongst the different provinces, with some being well equipped and others having virtually no equipment, as indicated in the following slide.

Table 1: Draft white paper on education: transforming education and learning through information and communication technologies (ICTs).

+----------------+-----------------+-----------------+
<table>
<thead>
<tr>
<th>Provinces</th>
<th>Schools with own computers</th>
<th>Schools with own computers for teaching and learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern Cape</td>
<td>8.8%</td>
<td>4.5%</td>
</tr>
<tr>
<td>Free State</td>
<td>25.6%</td>
<td>12.6%</td>
</tr>
<tr>
<td>Gauteng</td>
<td>88.5%</td>
<td>45.4%</td>
</tr>
<tr>
<td>KwaZulu-Natal</td>
<td>16.6%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Mpumalanga</td>
<td>22.9%</td>
<td>12.4%</td>
</tr>
<tr>
<td>Northern Cape</td>
<td>76.3%</td>
<td>43.3%</td>
</tr>
<tr>
<td>Limpopo</td>
<td>13.3%</td>
<td>4.9%</td>
</tr>
<tr>
<td>North West</td>
<td>30.5%</td>
<td>22.9%</td>
</tr>
<tr>
<td>Western Cape</td>
<td>82.4%</td>
<td>56.8%</td>
</tr>
<tr>
<td>National</td>
<td>39.2%</td>
<td>26.5%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>404.1%</strong></td>
<td><strong>239.7%</strong></td>
</tr>
</tbody>
</table>

*Government Gazette, 470:26734: 12.*

3. Purpose of the study

The aim of this study was to investigate the availability and utilization of ICTs by learners and teachers in secondary education schools in the uMhlatuze Municipal area. The objectives of the study were as follows:

- To determine the availability of ICTs in schools and their utilization thereof by learners and teachers.
- To determine whether and/or how ICTs have influenced information seeking behavior.
- To establish the obstacles, problems or limitations hampering the effective utilization of ICTs in the school environment.
4. Methodology
A survey was conducted using questionnaires. All nineteen secondary schools, learners, and teachers in the uMhlathuze Municipality were targeted. Following appointments made with the headmasters in order to explain the aim of the study, permission was sought and granted to continue with the study. Non-probability sampling was used, targeting 3% of the school’s learners and teachers. Since a number of schools were targeted (15), it was decided that 3% would be a manageable number of responses to deal with (which was in keeping with the scale of the study). One teacher familiar with ICTs per school was also sampled for interviews concerning specific ICT issues in each respective school. The results from the interview are not included in this report but will be reported separately.

The questionnaires were delivered and left with a contact teacher for distribution. While most of the schools had the questionnaires ready for collection, four schools, i.e. John Ross College, Qhakaza High School, Khombindlela High School, and Old Mill School; did not return any of the papers. A total of 447 questionnaires were distributed to teachers and learners, and only 409 were returned. The learners totaled 366, and teachers, 43.

Table 2: Questionnaires returns from Staff and Learners

<table>
<thead>
<tr>
<th>Schools</th>
<th>Staff</th>
<th>Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dlamvuza</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Dlangezwa</td>
<td>3</td>
<td>32</td>
</tr>
<tr>
<td>Dover</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Empangeni</td>
<td>5</td>
<td>33</td>
</tr>
<tr>
<td>Hlamvana</td>
<td>5</td>
<td>26</td>
</tr>
<tr>
<td>Khula</td>
<td>3</td>
<td>16</td>
</tr>
<tr>
<td>Matamzana</td>
<td>2</td>
<td>31</td>
</tr>
<tr>
<td>Mdlamfe</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>Ongoye</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Richards Bay Hoer</td>
<td>6</td>
<td>26</td>
</tr>
<tr>
<td>Richards Bay Secondary</td>
<td>2</td>
<td>39</td>
</tr>
<tr>
<td>St. Catherines</td>
<td>6</td>
<td>19</td>
</tr>
<tr>
<td>Thanduyise</td>
<td>0</td>
<td>21</td>
</tr>
<tr>
<td>Tholokuhle</td>
<td>4</td>
<td>16</td>
</tr>
<tr>
<td>Tisand</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>43</strong></td>
<td><strong>366</strong></td>
</tr>
</tbody>
</table>

5. Results and discussions
The results and discussions are represented under items 5.1 to 5.6 and illustrated in tables 3 to 9.

5.1. Availability and accessibility of ICTs in the schools
For utilization, ICTs need to be both available and accessible. It was assumed that both the private schools and Model C schools (these were largely urban schools for whites only during apartheid) would do well in both divisions, but this wasn’t always the case. Since some of these schools had no access to ICTs even computers are not part of the syllabus e.g. Dover,
Richards Bay Secondary. It was found that within the same school, there were groups that indicated that a specific ICT was available, and others who were not aware of the same facility. It is assumed that because any learner from any grade could have been a respondent, those in higher grades were more likely to be in the group exposed to ICTs like computers and the Internet as part of their curriculum. Of interest was the fact that with the exception of Tisand, none of the schools provided open access to computers. This indicates that computers are mostly used to support computer-based subjects as opposed to other subjects taught at the schools. The fact that many of the computer-based programmes/utilities are deemed accessible but the computers are not, is presumably because these are mostly used during class periods when students are given computer access for teaching purposes. Access during breaks or after school is therefore not practiced at most of the schools. Table three illustrates the results.

Table 3: Availability and accessibility of ICTs in the schools

<table>
<thead>
<tr>
<th>SCHOOLS</th>
<th>COMPUTERS</th>
<th>INTERNET</th>
<th>EMAIL</th>
<th>DATABASE</th>
<th>CD</th>
<th>FAX</th>
<th>TELEPHONE</th>
<th>PHONE</th>
<th>TV</th>
<th>RADIO</th>
<th>VIDEO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dlamvuzo</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>5</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Dlangezwa</td>
<td>20</td>
<td>15</td>
<td>4</td>
<td>1</td>
<td>4</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>18</td>
<td>19</td>
<td>4</td>
</tr>
<tr>
<td>Dover</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>11</td>
<td>5</td>
<td>9</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Empangeni</td>
<td>1</td>
<td>21</td>
<td>14</td>
<td>11</td>
<td>9</td>
<td>25</td>
<td>7</td>
<td>22</td>
<td>5</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>Hlamvana</td>
<td>12</td>
<td>12</td>
<td>4</td>
<td>3</td>
<td>3</td>
<td>11</td>
<td>9</td>
<td>6</td>
<td>10</td>
<td>6</td>
<td>14</td>
</tr>
<tr>
<td>Khula</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>Matamzana</td>
<td>12</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>11</td>
<td>10</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>Mdlamfe</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>0</td>
<td>20</td>
<td>12</td>
<td>24</td>
<td>13</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Ongove</td>
<td>14</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>4</td>
<td>5</td>
<td>11</td>
<td>8</td>
<td>7</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>RBay Hoërskool</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>RBay Secondary</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>St. Catherines</td>
<td>11</td>
<td>11</td>
<td>10</td>
<td>11</td>
<td>10</td>
<td>12</td>
<td>11</td>
<td>8</td>
<td>12</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>Thanduyise</td>
<td>20</td>
<td>18</td>
<td>10</td>
<td>6</td>
<td>12</td>
<td>16</td>
<td>16</td>
<td>1</td>
<td>11</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>Tholokuhle</td>
<td>13</td>
<td>9</td>
<td>10</td>
<td>2</td>
<td>1</td>
<td>16</td>
<td>16</td>
<td>13</td>
<td>16</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Tisand</td>
<td>13</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>9</td>
<td>11</td>
<td>4</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ICTs availability within schools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dlamvuzo</td>
</tr>
<tr>
<td>Dlangezwa</td>
</tr>
<tr>
<td>Dover</td>
</tr>
<tr>
<td>Empangeni</td>
</tr>
<tr>
<td>Hlamvana</td>
</tr>
<tr>
<td>Khula</td>
</tr>
</tbody>
</table>

167
Matamzana 0 17 13 1 10 1 0 14 9 13 6
Mdlamfe 0 5 8 0 0 3 0 6 0 1 2
Ongoye 0 5 5 3 4 2 1 2 3 2 0
RBHoërskool 0 0 0 1 1 0 0 0 0 0 10
RBSecondary 0 0 0 0 0 0 0 0 0 0 27
St. Catersines 0 13 13 3 3 0 5 8 10 7 9
Thanduyise 0 5 4 0 1 2 4 1 4 3 2
Tholokuhle 0 8 0 2 3 4 13 4 3 4 12
Tisand 3 10 8 5 9 7 1 8 8 9 0
**Total** 3 84 66 39 44 34 37 85 59 59 87

5.2. Purpose of using ICT tools and services

As illustrated in Table 4, ICTs are mostly used to communicate, and not to seek or retrieve information. For example, at a school like Mdlamfe High, nearly all the respondents (28) indicated that they used ICTs to communicate with the Department of Education. The reasons for this would be interesting to explore, as learners don’t normally partake in such communication. What is disturbing is the virtual exclusion of ICTs as methods of obtaining information for school assignments, where only one respondent from Khula High School indicated that he/she uses ICTs for this purpose. Since libraries are not available at most of the schools, it is viable to ask whether assignments are part of the school assessment programmes, or alternatively, which sources learners use to obtain information for their assignments. Most respondents (354) indicated that they do not use ICTs for learning purposes, and therefore presumably learning is mostly done from class notes and textbooks

<table>
<thead>
<tr>
<th>Respondents</th>
<th>Communication with DoE</th>
<th>Communication with others in the school</th>
<th>Communication with friends and relatives</th>
<th>Collaboration with colleagues worldwide</th>
<th>Dissemination of information</th>
<th>Access information for learning purposes</th>
<th>Doing assignments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dlamvuzo</td>
<td>7</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Dlangezwa</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dover</td>
<td>9</td>
<td>2</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Empangeni</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Hlamvana</td>
<td>4</td>
<td>15</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Khula</td>
<td>6</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Matamzana</td>
<td>9</td>
<td>15</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Mdlamfe</td>
<td>28</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ongoye</td>
<td>2</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>RBaii</td>
<td>13</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hoërskool</td>
<td>5</td>
<td>2</td>
<td>27</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RBay</td>
<td>5</td>
<td>2</td>
<td>27</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Secondary</td>
<td>5</td>
<td>2</td>
<td>27</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4: Purpose of ICT tools and services
5.3. Acquisition of skills to operate ICTs

Most (174: 47%) of the respondents appear to be self taught, which corresponds with the notion that modern young people have the ability to unravel technology on their own through trial and error. Very few students appear to have learnt their skills at school, which could mean that they were already introduced to and using many of the ICTs at home or in primary school. Notably 13 (4%) of the respondents indicated that they received training abroad, possibly because their parents emigrated or are immigrants. A sizeable number (104: 28%) did not respond to this question, indicating that they may not have understood the question in the first place. Table 5 illustrates the results.

Table 5: Acquisition of skills to operate ICTs

<table>
<thead>
<tr>
<th>School</th>
<th>Self study</th>
<th>From fellow learners</th>
<th>In-house course</th>
<th>Training abroad</th>
<th>At school</th>
<th>No response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dlamvuzo</td>
<td>13</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>Dlangezwa</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>26</td>
</tr>
<tr>
<td>Dover</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Empangeni</td>
<td>20</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Hlavnana</td>
<td>10</td>
<td>6</td>
<td>5</td>
<td>2</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Khula</td>
<td>10</td>
<td>1</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Matamzana</td>
<td>20</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Mdumane</td>
<td>10</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>Ongoye</td>
<td>11</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>RBHoerskool</td>
<td>9</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>RBSSecondary</td>
<td>30</td>
<td>3</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>St. Catherines</td>
<td>16</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thanduyise</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>13</td>
</tr>
<tr>
<td>Tholokuhle</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>11</td>
</tr>
<tr>
<td>Tisand</td>
<td>10</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>174</strong></td>
<td><strong>23</strong></td>
<td><strong>32</strong></td>
<td><strong>13</strong></td>
<td><strong>20</strong></td>
<td><strong>104</strong></td>
</tr>
</tbody>
</table>

5.4. Information seeking skills by using ICTs

ICTs have had a profound influence on how individuals seek information. Moving away from having to rely on only paper-based sources, ICTs provide instant access to electronic and digitized paper-based information sources worldwide. Seeking information using these sources is, however, not always straightforward and easily attainable
As is illustrated on table 6, it is encouraging to note that nearly half of the respondents (180: 49%) indicated that they are skilled enough to find the information they need either always or most of the time. However, the fact that 125 (34%) only sometimes found what they wanted, shows that there is a need to enhance information seeking skills.

<table>
<thead>
<tr>
<th>School</th>
<th>Always</th>
<th>Often</th>
<th>Sometimes</th>
<th>Never</th>
<th>No response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dlamvuto</td>
<td>5</td>
<td>0</td>
<td>9</td>
<td>13</td>
<td>0</td>
</tr>
<tr>
<td>Dlangezwa</td>
<td>13</td>
<td>10</td>
<td>5</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Dover</td>
<td>5</td>
<td>2</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Empangeni</td>
<td>10</td>
<td>9</td>
<td>7</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Hlamvana</td>
<td>7</td>
<td>6</td>
<td>10</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Khula</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Matamzana</td>
<td>8</td>
<td>6</td>
<td>17</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Mdlamfe</td>
<td>1</td>
<td>5</td>
<td>17</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Ongoye</td>
<td>3</td>
<td>0</td>
<td>7</td>
<td>9</td>
<td>0</td>
</tr>
<tr>
<td>RBHoerskool</td>
<td>11</td>
<td>6</td>
<td>8</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>RBSSecondary</td>
<td>12</td>
<td>14</td>
<td>10</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>St. Catherines</td>
<td>3</td>
<td>16</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thanduyise</td>
<td>5</td>
<td>9</td>
<td>6</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Tholokuhle</td>
<td>2</td>
<td>3</td>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Tisand</td>
<td>2</td>
<td>1</td>
<td>11</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>88</strong></td>
<td><strong>92</strong></td>
<td><strong>125</strong></td>
<td><strong>51</strong></td>
<td><strong>11</strong></td>
</tr>
</tbody>
</table>

5.5. Computer skills

A computer is arguably the most efficient ICT tool for information storage, retrieval, and dissemination within the education environment. Because computers can be used to do assignments, store class or extra notes for later retrieval, retrieve information via the Internet or e-mail, and disseminate and communicate information, computer literacy should be expected from all learners. As reflected on table 7, most respondents (217: 59%) appear to have enough skills to be deemed computer literate, while 54 (15%) rated themselves as fairly computer literate. Since computers form the backbone of today’s information economy, it is imperative that those learners who indicated that they do not have the necessary skills (95: 30%) be provided with skills training before entering the workplace.
Table 7: Computer skills

<table>
<thead>
<tr>
<th>Schools</th>
<th>Excellent</th>
<th>Very good</th>
<th>Good</th>
<th>Enough to enable me to work</th>
<th>None</th>
<th>No response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dlamvuzo</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>Dlangezwa</td>
<td>8</td>
<td>12</td>
<td>9</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dover</td>
<td>0</td>
<td>3</td>
<td>7</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Emangeni</td>
<td>8</td>
<td>5</td>
<td>11</td>
<td>7</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Hlamvana</td>
<td>7</td>
<td>0</td>
<td>6</td>
<td>5</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Khula</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Matamzana</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>7</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>Mdlamfe</td>
<td>1</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>2</td>
<td>15</td>
</tr>
<tr>
<td>Ongoye</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>4</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>RB Hoërskool</td>
<td>14</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>RB Secondary</td>
<td>7</td>
<td>7</td>
<td>18</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>St. Catherines</td>
<td>1</td>
<td>7</td>
<td>8</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Thanduyise</td>
<td>3</td>
<td>5</td>
<td>9</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tholokuhle</td>
<td>0</td>
<td>8</td>
<td>7</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tisand</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>55</strong></td>
<td><strong>62</strong></td>
<td><strong>100</strong></td>
<td><strong>54</strong></td>
<td><strong>41</strong></td>
<td><strong>54</strong></td>
</tr>
</tbody>
</table>

5.6. Use of computers for information retrieval
The fact that an individual is computer literate does not necessarily indicate that he/she can look for and successfully retrieve information. Knowledge of data filing systems, the determination of useful keywords, and the construction of a search string, are all skills that determine the success or failure of information retrieval. Although it was mainly respondents from former Model C schools and private schools that indicated that they had information seeking and retrieval abilities using the Internet and e-mail, it was heartwarming to note that the more rural schools, such as Dlangezwa, Khula and Thanduyise also had access to these facilities, and their respondents felt mostly confident about their retrieval abilities, as can be seen in the next slide. Table 8 illustrates the results.
Table 8: Utilization of computers for information seeking and retrieval

<table>
<thead>
<tr>
<th>Schools</th>
<th>Computers</th>
<th>Internet</th>
<th>E-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Dlamvuzo</td>
<td>1</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>Dlangzwa</td>
<td>12</td>
<td>9</td>
<td>8</td>
</tr>
<tr>
<td>Dover</td>
<td>1</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>Empangeni</td>
<td>8</td>
<td>7</td>
<td>12</td>
</tr>
<tr>
<td>Hlamvana</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Khula</td>
<td>7</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Matamzana</td>
<td>6</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Mdlamfe</td>
<td>0</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>Ongoye</td>
<td>2</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>RBH</td>
<td>15</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td>RBS</td>
<td>9</td>
<td>9</td>
<td>13</td>
</tr>
<tr>
<td>St. Catherine</td>
<td>4</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>Thanduyise</td>
<td>4</td>
<td>3</td>
<td>8</td>
</tr>
<tr>
<td>Tholokuhle</td>
<td>1</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>Tisand</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>76</td>
<td>61</td>
<td>91</td>
</tr>
</tbody>
</table>

5.7: Limitations affecting ICT utilization

With the development of proper technological infrastructure still in its infancy, it can be assumed that there would be problems hampering ICT utilization. There are several limitations in the use of ICTs amongst the schools participating, the most notable being the lack of electricity (55: 15%) as illustrated on table 9. Interestingly, even schools that are known to have electricity available had respondents citing it as a problem. Perhaps certain classrooms lack electricity, or plugs don’t work, which would hamper the use of ICTs. The lack of trained teachers (33: 9%) with the ability to assist learners in acquiring ICT skills is also a problem that needs to be addressed. Many of the teachers currently in the school system have never been trained in ICT utilization, and are therefore unable to provide assistance.
Table 9: Limitations affecting ICT utilization

<table>
<thead>
<tr>
<th>School</th>
<th>No electricity</th>
<th>No telephone lines</th>
<th>No mobile phones</th>
<th>No safe rooms</th>
<th>No security</th>
<th>Untrained learners and staff</th>
<th>No radio</th>
<th>No Video</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dlamvuzo</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>7</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dlangezwa</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Dover</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Empangeni</td>
<td>1</td>
<td>0</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Hlomvana</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>3</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Khula</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>0</td>
<td>6</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Matamazana</td>
<td>6</td>
<td>6</td>
<td>4</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Mdlamfe</td>
<td>21</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ongoye</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RBH</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>RBS</td>
<td>4</td>
<td>0</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>St. Catherine</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Thanduyise</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tholokuhle</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Tisand</td>
<td>2</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>65</strong></td>
<td><strong>8</strong></td>
<td><strong>40</strong></td>
<td><strong>39</strong></td>
<td><strong>13</strong></td>
<td><strong>33</strong></td>
<td><strong>4</strong></td>
<td><strong>2</strong></td>
</tr>
</tbody>
</table>

6. Conclusions

Although many of the schools are relatively well-equipped with ICTs, access seems to be the biggest detractor in their utilization. If the Department of Education is serious about exposing all learners to ICTs by 2013, accessibility needs to be urgently addressed. This would have direct implications on schools, in the sense that extra staff might need to be hired to man computer labs on a permanent basis and/or after school. Alternatively, the existing staff would have to bear the brunt and take on even more responsibilities despite already overloaded programmes. A solution would be to train Grade 12 learners as assistants who could oversee computer labs, or as operators of fax machines, televisions or video machines. In this way, the learners would gain valuable work experience.

The cost of implementing and maintaining ICTs, especially computers, the Internet and electronic databases, can place huge financial strain on most schools budgets, particularly since technology ages rapidly and needs to be upgraded or replaced often. Commitment from the government in the form of an ICT subsidy could alleviate some of these problems, but whether this would make much of a difference in the poorest schools is debatable. Other pressing needs might result in the funds being committed elsewhere.

Despite the general lack of access to ICTs at schools, it would seem as if the learners were quite informed about the advantages of using ICTs for knowledge acquisition and communication. While the respondents lamented the lack of skills and opportunities available to learn to use ICTs, especially computers, many have already mastered some of the skills on their own, and are already using ICTs for a variety of purposes. These abilities need to be enhanced and fostered, and where possible, applied, in order to prepare the learners for the working environment and for lifelong learning. Most employment
opportunities are linked to the knowledge of ICTs, and therefore the school authorities’ most considerate attention and focus should be on equipping all schools with the necessary tools. Only when all learners exit the school environment as ICT literate individuals, can schools judge themselves as having succeeded in preparing them for the global environment.

Most of the staff members in these high schools had no proper ICT qualifications to teach subjects like computer science. This is largely because teacher training institutions do not include technology in their curricula.

The fact that many of the teachers currently in the profession are not computer literate, not only hampers their own efforts to retrieve and utilize this information resource for teaching purposes, but also prohibits them from assisting or teaching the learners where necessary. Often when the teacher is not computer literate, the learners are barred from using the available computers, thus rendering them useless as educational tools. Teacher education and training modules should take this shortcoming into account and develop the necessary skills either during the teachers’ training years, or through short courses and hands-on workshops.

The fact that communication is still the most prominent use of ICTs shows that information seeking skills · using tools like the Internet and databases to actually find information · are still lacking. This needs to be addressed because the global world expects individuals to be able to retrieve and use information for problem solving. Failing to do so can lead to failure in the work and social environment.

Reference
Stranger - Queens: a discussion of some aspects of the ritual and executive roles of women rulers and court officials in pre-colonial empires in East and Southern Africa

Gina Buijs\textsuperscript{st} (gbuijs@pan.uzulu.ac.za)

University of Zululand,

South Africa

Abstract
This paper discusses some of the roles of women in the pre-colonial empires of southern Africa, in particular looking at the role of women as rulers or associates of rulers among the Lovedu, at Mapungubwe, Great Zimbabwe and among the Venda people of present day Limpopo province, South Africa. Women rulers in this part of Africa have been little remarked on, with the exception of the rain queen, Mujaji and the Swazi Queen mother, often not the mother of the Swazi king but a powerful complementary female ruler. In keeping with the theme of rulers who appear as strangers the paper looks at the mysterious provenance of the Lovedu queens and others as well as the connection of these women to large scale trade with the Indian Ocean coast from the 10\textsuperscript{th} to the 15\textsuperscript{th} centuries at Mapungubwe, Great Zimbabwe and other centres of political, social and economic activity in this part of Southern Africa, centred on or around the Limpopo river. I have written elsewhere (Buijs, 2002 a, 2002 b) of the ritual role of the father’s sister in Venda society. This paper extends that discussion to encompass the role of royal or high status women as holders of ritual positions and often ‘outsiders’, or ‘stranger-queens’ as among the Lovedu. I suggest that these high status women may have used their ritual positions to further improve trade with the coast and inland.

Introduction
The role of women designated as ‘ritual sisters’ or ‘queen mothers’ has been reported widely in West and East Africa, among, for instance, the Bunyoro of Uganda of whom Beattie (1958) writes of the Kalyota whom he calls ‘the king’s official sister’ that She was really a kind of chief...she held and administered estates, from which she derived revenue and services like other chiefs. She settled disputes, determined inheritance cases and decided matters of precedence among the Bito women. She was not the queen, if by queen we mean the king’s consort. We may best regard her then, as a kind of female counterpart of the king, the head of the Bito women and so the chief lady in the land’.

The Kalyota had a counterpart in the form of the king’s official brother, head of the Bito, the ruling clan among Nyoro men. Beattie notes that ‘although there is little place for her [the Kalyota] in the modern system’ she still holds an official rank and is paid a small salary. The position of the Kalyota in colonial Uganda seems to have been viewed with disapproval by colonial authorities, if one reads between the lines of Beattie’s comments

Nowadays she (the Kalyota) is socially overshadowed by the king’s true consort, the Omugo, whom he married in Christian marriage and who has borne him several children. It was she, and not the Kalyota, who accompanied the Mukama (the king) on his visit to England for

\textsuperscript{48} Gina Buijs, PhD, is Professor of Anthropology and Development Studies and Assistant Vice Rector Academic Affairs, University of Zululand, South Africa. Prof. Buijs was also the keynote speaker.
Queen Elizabeth’s coronation in 1953, and she sits at his side at ceremonies and entertainments \textit{at which Europeans are present} [author’s italics] (Beattie 1960:31)

\textbf{The makhadzi or paternal aunt in Venda}

Much as among the Nyoro, in Venda the position of father’s sister or \textit{makhadzi} is an important one, especially in matters of chiefly succession. A chief is succeeded by his son, who is appointed by the \textit{makhadzi} and \textit{khotstimunene}, his father’s brother. When these two appoint the new heir, they at the same time appoint one of his sisters to be the \textit{khadzi} and one of his brothers to act as \textit{ndumi} (the official brother of the chief). The respect and obedience due to a chief is transferred upon his death to his ‘female father’ and ‘little father’, his father’s sister and father’s brother, and, says Stayt (1931:196): ‘until their deaths they have the right to command the person of their late brother’s son, whom they have appointed to represent the family.

The \textit{makhadzi} is the late chief’s eldest sister, although she may not be a uterine one. The chief is supposed to consult her and follow her judgment on all matters concerned with the affairs of his people. The \textit{makhadzi} lives at the chief’s capital with her husband and children living elsewhere. She receives a percentage of all taxes paid to the chief, who must grant all her reasonable requests. She is treated with most of the respect and formality accorded to the chief. Even men, writes Stayt, to whom all other women kneel, must kneel to the \textit{makhadzi}. Her food is prepared, like that of the chief, by one of his wives, and presented to her with the same ceremony as it is given to him. All this respect, notes Stayt, is the outward and visible sign of the real power that she wields in the state. In addition, her home is a sanctuary for criminals and murderers, whom she may reprieve and her consent is necessary before war may be waged. In all these matters her judgment takes precedence over that of the chief and he is bound to submit to her decisions. Additionally, the \textit{makhadzi} is the priestess of the family. It is her task to communicate with the ancestors at life cycle rituals, through pouring libations. As priestess, her ritual role is intensified and her brother and his children fear her wrath.

\textbf{Historical Background}

In the Shona kinship system of Zimbabwe today, a father’s sister is known as \textit{samakhadzi} and she officiates over inheritance proceedings when her brother dies. In 1956 a sister of chief Maranke in eastern Zimbabwe (then Rhodesia) acquired authority over part of the community when she was installed with him and several cases of headwomen are known among the Manyika. Huffman speculates that these are ‘probably vestiges of a more complex role in the past’. For a special sister of a Zimbabwe ruler had similar duties to the Venda \textit{makhadzi}. Called \textit{vaMoyo} in Rozwi praise poetry, Shona traditions recall the sister of the founding father as ‘the great ancestress’ (Hodza and Fortune, 1979). She was the senior female representative of the ruling clan and each new chiefdom should begin with the ritual union of the chief and his sister. It was her duty to keep the sacred medicines that allowed him to govern. Huffman (1996) comments that the documentary evidence on whether the chief and his sister ever married is ambiguous, and quotes Theal (1964 [1898]: 368) as saying that the king, although having many wives, ‘most of them are his relatives or sisters...the principal one, called \textit{mazarira} is always one of the king’s sisters.’ Van Warmelo, writing of the Venda says ‘some chiefs even marry daughters of minor wives of their fathers, that is, their half-sisters. The object of these virtually incestuous marriages of chiefs is to ensure that the \textit{musanda} (royal homestead) will be full of princes who know the manners and rules to be observed in the villages of royalty’ but, he comments, ‘the real reason is probably a relic of the ‘sacred kingship’, which can find spouses fit for the king only amongst his closest relatives (i.e his sisters)."
While the term *makhadzi* has been rendered as ‘chief’s eldest sister’ by Stayt and is supplied as ‘paternal aunt’ in Van Warmelo’s Venda–English dictionary, I was told in an interview with one of the councilors of a female Venda petty chief, Musanda vho-Netsihendeulu, that the term means ‘one who commands, or is in control, an adviser’ This usage was reproduced in the local Venda English language newspaper, The Mirror in an article concerning a dispute over the succession to the chieftship of the Venda royal house of Mphephu. In early 1998 the reigning paramount chief, Khosikhulu Dimbanyika Mphephu was killed in a car crash. It was reported that the new acting chief, Prince Toni Peter Ramabulana Mphephu would fulfill the duties of the late king, together with his female aide, Khadzi Mavis Mphephu. Prince Toni and Khadzi Mavis had both been installed as the king’s assistants during his inauguration in 1994. Stayt notes that the power of the *makhadzi* to nominate her brother’s successor is a source of endless family feuds if the dead man’s brothers refuse to recognise the power of the makhadzi. The Mirror newspaper reporter, Alpheus Siebane, continued ‘Prince Toni will continue to act as chief until the royal family decides to install a leader. According to members of the family this is not going to be an easy task. The late Chief Dimbanyika was married to one wife, who has only one child, a six year old girl named Masindi. She is the only child that the Mphephu royals recognise...Another elder member of the royal family, VhaVenda Phophi Mphephu, a sister to the late Patric Mphephu, who acted as regent when Dimbanyika was still young, will not be left out in the cold. She will assist the young leaders as an adviser. She is one of the members of the former leadership who is being favoured by the new chieftainship’.

Stayt notes that if the *makhadzi* considers the traditional heir unsuitable as the head of the family, she may designate any other son, the choice resting entirely with her. Her power in this matter often results in the personal equation influencing her choice unfairly, and sometimes she may, for her own ends, pass over the lawful heir on some trivial and invalid excuse, nominating another son over whom she has more influence. If her nominee is accepted all is well, but this personal element in the appointment of the heir, although theoretically very limited by customary law, is the font of endless family feuds. In the past the death of almost every patriarch resulted in family disruptions, the deceased man’s brothers refusing to recognise the *makhadzi*’s nominee and attempting to usurp her power by setting up as head of the family the man whom they considered would best serve their ends’ (1931:197).iii

**The role of the father’s sister in Tonga**

The influence of women in their role as sisters has been well-documented in Polynesia and Melanesia (Weiner 1976, 1978 a.) The way in which the authority of the father’s sister was diminished by the colonial authorities, who considered this brother-sister relationship of collaboration and power inappopriate, can be seen in Christine Ward-Gailey’s (1987) accounts of Tongan kinship in pre and post colonial contact periods. A father’s sister was never ignored – Tongan women, especially chiefly women, exercised social authority throughout life as sisters. These rights, which Ward-Gailey notes were often termed privileges in the literature, included the sister’s call on her brother, his household and his descendants. She and her children were *faahu* to the brother and his children. The term *faahu* subsumed the claims of sisters and sisters’ children. The term meant ‘above the law’ or ‘beyond custom’. The father’s sister, the imposing *mehikitanga* was the focus of avoidance by the brother and his children, especially his sons. She arranged and vetoed his brother’s children’s marriages. She could command the labour and produce of her brother’s spouses and she had the right to adopt her brother’s children. A curse from the *mehikitanga* threatened a brother’s children and spouse with painful childbirth. The role of the sister and *faahu* transcended lineage affiliation. Before, during and after marriage a sister had the same claims to a brother and his children. The colonial authorities frowned on the apparent ‘interference’ in the brother’s affairs by the sister and put an end to the power of the
Stranger - Queens: a discussion of some aspects of the ritual and executive roles of women rulers and court officials in pre-colonial empires in East and Southern Africa

*mehikitanga* to use her veto over her brother’s children’s marriages. The 1867 Tonga legal code tried to limit the influence of the *fahu* and at the same time to strengthen the role of the nuclear family as a social unit. The code consistently stressed the centrality of the conjugal pair and especially the responsibility and authority of husbands over any collateral kin collection. For instance, it was forbidden for anyone “to interfere to stop a wedding”, which effectively eliminated the right of the father’s sister to arrange or veto the marriages of her brother’s children. The Tongan state later banned all exercise of *fahu* prerogatives, which meant that a woman could not legally call on the labour of her brothers or their wives and made wives more dependent on their husbands, in European fashion (Ward-Gailey, 1987:208,211).

Gillian Feeley-Harnik (1997) notes that French observers writing in the late 18th century and the 19th century of the Malagasy, argue that the Malagasy preferred male heirs, but Malagasy documents from the Merina royal archives emphasise the role of a group of ‘brothers and sisters’ in deciding succession and clear emphasis on brother-sister endogamous unions and the heirs of such unions. Moreover the French colonial conquerors disparaged the great female 19th century Malagasy female rulers and Feeley-Harnik comments that even Maurice Bloch chooses to analyse the Merina royal bath in generic, rather than historical terms, persistently referring to the central royal figure as ‘he’ or ‘the king’. This despite the fact that from 1828 to the French invasion of 1895, Merina royals were women (with one exception who was strangled after two years in office.)

The power of women rulers in Southern African kingdoms is mystical in origin and was related to their connection to fertility and the ability to make rain. Tshisinavhute of Mianzwi in eastern Venda was a female rainmaker and ruler. Tshisinavhute was the title of the Mbedzi ruler who has been female since at least the end of the 18th century and possibly much earlier. The first female Tshisinavhute, Mufanadzo, had been given the gift of rainmaking by her father, but according to oral tradition, had had to enlist the help of Chief Ligege Tshivhase to drive out and kill her brother who also had been a powerful rainmaker at Mianzwi. Since then succession to the headship and powers of rainmaking at Mianzwi had passed from mother to daughter. Ralushai and Gray (1977) suggest that the change from male to female in succession in this area may be partly explained by the increasing incidence of male circumcision in the area, a custom which was introduced by Sotho speakers from the south-west. Ralushai and Gray mention raids on the Mbedzi in search of uncircumcised men. These raids were detrimental to the rain-making powers of the Mbedzi as males who had been circumcised were not allowed to hold sacred objects. Tshisinavhute, as a woman, was saved from these raids (1977).

In a similar manner to Tshisinavhute, the origin of the Vondwe female chieftaincy appears to lie in a dispute involving a sister and her brother, although here the accounts given by local people and that given by the headwoman herself differ considerably. Matshidize (1988:24) dates the emergence of female chieftaincy at Vondwe to the installation of Nyatshitahela in 1914. In this account, Nyatshitahela was the wife of Chief Rambuda of Dzimauli. Following a succession dispute she fled with her only son to her maternal grandmother’s home and, upon the death of her father, Headman Ramugondo of Vondwe, returned to Vondwe and became headwoman there. Some of Matshidize’s informants said that the Vondwe ancestors preferred a female ruler; others that Nyatshitahela had engineered the removal of her classificatory brother who had been installed as chief shortly after the death of her father. Musanda Gumani, the present headwoman, said it was her ancestor was made headwoman at Vondwe by her brother, a local chief. She related that Nyatshitahela had been married to another chief nearby who had died. The people of his village blamed his
wife for his death and wanted to kill her. To save her, her brother removed her to his own chieftdom and made her headwoman at Vondwe.

Although Nyatshitahela was succeeded by several male descendants, their reigns were inauspicious. One died after having been struck by lightning, and his son, who succeeded him, died childless in 1976. It was at this point that the chief’s family and the community reached a decision that there should be a return to female rule, since it seemed that Nyatshitahela, as an ancestor, was asking for a female successor as the males had not fared well. The present headwoman was installed and given the title Gumani at the age of twenty one in 1976. Musanda Gumani has commemorated her ancestress by naming a local school after her. VhoGumani is an educated woman who is a senior officer at the Thohoyandou Central Prison, which is situated not far from her khoror (traditional court) where she hears cases on Sundays in the company of her vhakomar or headmen.

Another example which Stayt gives of women being able to succeed to at least petty chieftship in Venda is of Nyadenga of Phiphi and Nyakhalavha of Khalavha. When the father of Chief Tshivhase left Phiphi to make his capital at Mukumbani, he left his daughter Nyadenga as petty chief in the Phiphi district; she was his heir, being the only child of his great wife, but being a woman could not succeed her father as a great chief. At Phiphi she has the full rights of a man and is only subordinate to the chief himself. Her position will be inherited by her eldest daughter’ (1931: 215).

**Mujaji: the Rain Queen**

While Venda women rulers were never ‘great chiefs’, the Lovedu to the south had perhaps the most famous of all African women chiefs, Mujaji, the rain queen, described in many fictionalised accounts by European writers, most notably Rider Haggard in ‘She’, as well as by E.J and J.D Krige in their ethnography ‘The Realm of a Rain-Queen: a study of the pattern of Lovedu society (1943). The Kriges note that while rain making is an important duty of the ruler among many peoples, among the Lovedu it has become central to the whole system of social and political control. While the ritual powers of a ruler, including elements of divine kingship are present in most societies in southern Africa, for no other people has it been reported that such ritual power is relied on as a sanction for the maintenance of internal law and order to the exclusion of physical force. The value of this ritual power in foreign relations has been such that a fair-sized kingdom has been built up without a significant military presence.

The Kriges write ‘hallowed by a heritage of incest, she (the Lovedu queen) is chosen for her role by the ghost of her predecessor, and her destined end is death at her own hands, in order that she may rule by divine right’ (1943: xii). Marshall Sahlins quotes Luc de Heusch as referring to St.Just to the effect that ‘between the people and the king there can be no natural relation....for (power) is typically founded on an act of barbarism – murder or incest, or both.’ De Heusch calls this ‘the exploit’, a feat mythically associated with the ancestor of the dynasty, and often re-enacted at the installation of each successor (quoted in Sahlins, 1985: 79). Sahlins continues ‘it is important to note that power is not shown here as an intrinsic social condition but as an usurpation in the sense of a forceful seizure of sovereignty and denial of the prevailing moral order (thus) usurpation itself is the principle of legitimacy’ (1985: 80).

By 1800 the Lovedu kingdom had existed for two centuries, small compared to larger neighbours such as the Venda, the Pedi and the Shangaan-Tonga but more renowned. While Lovedu kings had always been sacred rulers, known for their rain making ability, rulers of other tribes shared this talent. But to many, including the Zulu, it was Mujaji who was the greatest rain maker, held to be inaccessible, immortal and mysterious. Her mystery lay in
her power to transform clouds into rain. The Kriges say the name Lovedu is derived from a word meaning the country where the wealth of foreign chiefs (cattle, daughters) is lost for they become offerings to Mujaji for rain.

The origins of the Lovedu, Kriges write, lie in the vaKaranga people of Zimbabwe around 1600. Sons of the Monomotapa or king, quarrel and set themselves up as mambos (chiefs) who rule not by force but through supernatural powers ending their reign by ritual suicide. One mambo’s daughter gives birth to a son, although she is unmarried. She refuses to identify the father and runs away with her child, but not before stealing her father’s rain charms and sacred beads and learning how to use them from her mother. After a long journey the chief’s daughter arrives in vuLovedu with her son and a handful of faithful followers. Lovedu tradition records that the child was the result of an incestuous affair between uterine brother and sister. The brother remained behind in vaKaranga and became mambo as successor to his father. His sister ‘by virtue of her incest..justifies the creation of a new people’ the Lovedu. The origin myth continues with recording the presence of a savage hunter-gatherer people in the new land, who knew no fire, and were tutored by the cultivated Lovedu. On the other hand, the Lovedu avoided the ruins of the indigenous Ngona people as the ancestral spirits of the Ngona were believed to haunt their ancient dwellings, a very similar belief to the Venda.

The following two centuries replicated a succession of tribal splits among the Lovedu, pitting brother against sister. Around 1800 one of the daughters of King Mugogo gained the upper hand over her brothers. Before the old king died he is said to have prophesied the accession of a woman, the raids of black ants on Lovedu territory (Nguni from the south), and the conquest of the land by red ants (Europeans). The daughter of the first Mujaji is said to have been born as a result of an incestuous union between her mother and mother’s father.

The inaccessibility of Mujaji and the fairness of her complexion, became, according to the Kriges, ‘the subject of rumour and fantasy’ for Europeans who had never seen the previous queens. The anthropologists remark that fairness of complexion is a feature of many Lovedu and is highly prized. Rider Haggard attributed Mujaji’s wisdom to Arab ancestry but Eileen Kriges is having none of that: ‘it was not by virtue of any foreign blood that ‘She’ ruled the tribe..and there is nothing to suggest that the Lovedu owe their organization or culture to an alien conqueror’ (1943: 2).

A more lurid version of the foreign ancestry of the queen came in a 1936 book quoted by Kriges called ‘The Bush Speaks’, in which Mujaji is represented as a crafty woman of mixed white extraction who came with her people from West Africa and persuaded them to believe in her rain-making powers. Kriges notes that the author of this fantasy supposed that the female ancestors of Mujaji were white women, sold to Arabs on the slave markets of West Africa, who enchanted their new masters with their sexual attractions. Hence Mujaji remaining unmarried and the many women at the royal court (wives of the queen) whose duty it was to captivate foreign chiefs. As Kriges puts it, the author of the ‘The Bush Speaks’ paints a picture of intrigue and debauchery at Mujaji’s capital, supported by assassinations and poisonings. Such fantasies were constructed from the Lovedu tradition that the queen should have no physical defect and should poison herself at the end of the fourth initiation of her reign, ritual suicide thus elevating her to the status of a divine being, for only by her own act could she die. The death of the queen, however, is a portent of drought and disaster. As she is the ‘soil’ of the kingdom, her death is said to heat or ‘dry up’ the soil and the land is said to die with its owner. Eileen Kriges notes that when the second Mujaji committed suicide in 1894, there followed three years of unprecedented drought and pests during which almost all the cattle and a third of the Lovedu population died.
The myth of the rain queen as a West African stranger may have originated in romantic fantasies of Europeans, but a curious echo has emerged in present day Malawi, after the death of the dictator Hastings Banda. Banda never spoke ciCewa and had no apparent close relatives in Malawi. He had spent many years abroad, first in South Africa, then in the United States where he trained as a medical doctor and later in Britain where he practised medicine, before returning to Nyasaland to lead his people to independence from colonial rule and becoming ‘President for Life’ in an independent Malawi. After his death it was a common rumour that Banda had died as a young student visiting West Africa and that his identity had been stolen by a friend of his. It was this imposter who was said to have returned to Malawi and ruled the country. Evidence for this story was that strangers had been observed to arrive secretly late at night at the presidential palace. It was said that these people were greeted privately by Banda in a West African language.

While the Lovedu queen’s remoteness and inaccessibility in her mountain home increased the mystery and awe with which she was regarded by subject and foreigner alike, it was her ability both to make rain and withhold it from her enemies that was the real source of her considerable influence and power among neighbouring and relatively far flung tribes. The *gomana* or beating of the sacred drums was the chief ritual which had the power of asking for rain from the ancestors. These sacred drums were regarded as gods. Everywhere among the Lovedu their beating was associated with rain and the agricultural year. Not only were the drums gods, but their sound was thought to be pleasing to the *zwidajani*, ancestral spirits, who, when the drums are sounded are said to come and sing and dance.

The Thaveni and Nareni, tribes to the south of the Lovedu used to offer to the sacred drums the first fruits of their harvests. Sahlin notes for Fiji that pre-Christian documents show that the enormous quantities of food and goods brought for ceremonial exchange from other lands were presented to the gods of the recipients. ‘Nearly everything we call ‘trade’ and ‘tribute’ was at that time sacrifice’ (1985: 88). The process of incorporation of foreign tribes into the sphere of influence of the Lovedu depended on the obligation of the foreigners to send one of their daughters as wife to Mujaji. These women were then given to the noblemen of the aristocratic founding lineages among the Lovedu. Through the links created by giving brides and receiving cattle, loyalties were created and foreigners and Lovedu became closely linked.

The *gomana* or sacred drums are regarded as *gomavi* to the Lovedu, meaning something secret and wonderful, which it is a privilege to see, almost supernatural. For instance, an essential aspect of Lovedu initiation is the showing of *digoma* figurines, which may be clay figures of humans or animals, but also masked figures in reed or animal costumes who perform dances during the *vyali* initiation ceremonies. While laws taught in initiation schools are also referred to as *digoma*, the greatest goma of all are the sacred drums and the greatest *goma* of *vyali* is *khiudogani* which means the Great Bird of Muhale (Zimbabwe). The Bird is the ruling spirit of the initiation ritual and it has many praises sung by girls in its honour. It comes when the green foods of summer are eaten and is associated with fertility and plenty.

Lovedu royal dwellings and sacred spaces share features with the remains of many other important archaeological sites of the Limpopo valley (Mapungubwe, Dzata), the confluence with the Sashi river (K2, Schroda), further into the Kalahari in the Tsodilo hills, and most famously, with Great Zimbabwe, home of the famous soapstone birds. In all these places, archaeologists have found the evidence of wide scale and prolonged trading and little or no evidence of a military force.
Early Kalahari trade

Wilmsen (1989) notes that from the 7th to the 11th centuries a large number of sites in the eastern Kalahari were established by pastoralists, the earliest containing ceramics similar to those distributed widely in Zimbabwe and the northern Transvaal by 600 AD. Iron and copper tools were abundant, most made locally. Cane glass beads made in India or Arabia and cowrie or conus shells, some from species living only in Indian Ocean estuaries were found at four of the largest sites. Divuyu in the Tsodilo Hills in the eastern Kalahari, occupied in the 6th and 7th centuries, is an early Iron Age site rich in ceramics, iron and copper tools and ornaments and ivory. Divuyu ceramics are similar in design to those contemporary in central Angola and Mandinga-Cayes near the mouth of the Congo river. Marine shells from the Atlantic ocean and two iron pendants, similar to some of the same age found in Shaba province, Congo were found at Divuyu. These archaeological finds provide evidence that during the first centuries AD the northern margins of what we refer to today as the Kalahari desert were already actively part of a wider sphere of production and exchange, extending throughout a large portion of the Angolan and Congo river systems. In these trade exchanges relatively small groups of Bantu speakers and Khoisan appear to have mixed on generally equal terms.

The largest site on which we find evidence of both crop growing and pastoral activities between 700 and 1000 AD in this part of the Kalahari is Nqoma, situated on a low plateau on what has become known as the female Tsodilo Hill.viii An elaborate variety of iron, iron and copper ornaments, with many iron tools were made on the site. Cane glass beads and marine mollusc shells, including the money or ring cowrie provide evidence that Nqoma was an important centre in local intercontinental trade networks extending from the Indian coast by the 9th century. Matlapaneng, north east of Maun was contemporary with Nqoma but while Matlapaneng was as large as Nqoma, it was not nearly as rich in ornaments or trade goods. Wilmsen writes that it appears an elite was established at Nqoma that was able to exercise sufficient hegemony over the inhabitants of secondary settlements to appropriate most imported goods (1989: 73). Local products possibly exchanged for ceramics would have included ivory, rhino horn, ostrich feathers and egg shells, gum Arabic, aromatic wood (Cape sandalwood, Spirostachys Africana), red dye woods (Pterocarpus angolensis) and limonitic red pigments. The pigments could have been the source for red slips on bowls and dishes and for the rock paintings at Tsodilo. Dye woods are known to have been prized trade items at least as early as the 16th century when they were used in dressing leather goods. In addition, both pigments and woods are used to make cosmetics and are in demand for this purpose (Wilmsen, 1989: 75). Salt, ivory and cattle from the Lake Ngami area were probably traded with Angola/Congo and shells, metal and dried fish received in return.

The salt trade

Wilmsen (1989: 117) records the 19th century traveller and ethnographer, C.H. Hahn mentioning the preparation of salt from saltpans in the area by Bushmen who transported them in the form of loaves to Ondongo to sell and Hahn wrote ‘so the salt trade was fully as important or even more important than that of copper’. Long distance footpaths used by the salt traders probably became the avenues for the dissemination of European goods and influences from the 18th century onwards. Lidia Sciama (1998) alludes to the notes of the 15th century Venetian traveller Alvise da Mosto who, in his journeys along the West African coast and up the Senegal and Gambia rivers, recorded that large quantities of salt were taken by Arab traders to various localities, especially Timbuktu and Mali. If after the trade in Mali was completed, any salt remained unsold it was taken further south by caravans on foot. She writes (1998: 11) ‘Da Mosto’s description of the way salt is paid or bartered for with gold is an interesting example of invisible trade’. Da Mosto heard of this custom from Arabs and experienced it himself. Small quantities of salt, or other goods, are left in places established by convention. The receiving party will place beside them the goods they are prepared to give
in exchange, but if the quantities offered are not considered satisfactory the whole process is repeated and sometimes the exchange may fail. Da Mosto writes of the attempt by an Emperor of Mali to find out who the people were that conducted this trade by capturing a trader, who died in captivity a short while later rather than utter the secrets of the trade.

Salt making has been known from the archaeological record for many places in the Soutpansberg mountains close to the Limpopo river and most particularly from the archaeological site known as Die Eiland, near Tzaneen and the Lovedu capital. Die Eiland is known for its mineral baths (today the hot springs are a holiday resort) and there are many peat bogs containing salt nearby. Pottery finds for Die Eiland have been dated to as early as the 3rd century AD. The salt making tradition was observed by Evers (1981) to continue at Sautini, near Die Eiland in much the same way in the 1960s as the archaeological tradition suggests it was carried on centuries before. At Sautini salt was produced by women only who came from surrounding villages, bringing food and utensils and never sleeping at the site. They began by making an offering of beer and food to the ancestral spirits at a ritually important place, here a dead marula tree (Sclerocarya caffra). The women made a filter out of mopane (Colospermum mopane) stakes and bark into which a grass and dried clay filter was placed. Salt was scraped from the ground together with clay and mixed with sand to help the filtering process. Fresh water was poured through the salty sand-clay mixture until the water passing through the filter was no longer salty.

Underneath the filter pots were placed to collect the brine which was filtered repeatedly until clean. The women then boiled the brine down, scraped out the salt and formed it into cakes which were lightly baked to harden them and make them easier to transport. Clay pots broke after a time as the salt penetrated the clay and at some salt making places quantities of soapstone or schist bowls have been found which Evers writes ‘were undoubtedly used for boiling brine and which would have lasted longer than pots’ (1981: 79). Oral tradition records an invisible trade in salt between Bushmen and Venda in the Soutpansberg mountains continuing as late as the 19th century. Significantly, the rock art of the Limpopo Flats while in manner of depiction and range of subject matter is ‘diagnostic of the San rock art tradition that is found throughout South Africa, Lesotho, Swaziland, Botswana, Zimbabwe and Namibia ....is unique in its inclusion of more recognisable depictions of women than men’ (Hall and Smith, 2000: 39).

Mapungubwe

The trading centres of the western Kalahari were eclipsed from the 9th century by new trading networks originating from the Indian ocean coast which led to the development of a complex, socially and economically differentiated society centred on sites such as Shroda, K2 and, most famously, Mapungubwe and Great Zimbabwe. While the majority of the population at these centres seem to have been engaged in pastoralism and/or foraging (Hall, 1987; Hall and Smith, 2000), the elite lived and died surrounded by trade goods which included gold and ivory ornaments and woven cloth.

Mapungubwe was built around a sandstone hill rising steeply from the valley adjacent to the Limpopo. At the summit Fouche found what has been termed ‘royal burials’, arguably the most splendid in sub-Saharan Africa. Huffman (1996) notes that three of the burials excavated by Fouche (1937) and Gardner (1963) were associated with gold objects. The first one he discusses, No. 14 ‘was probably that of a woman buried in a sitting position, facing west. She wore at least a hundred gold wire bangles around her ankles and there were over 12,000 gold beads in her grave’ (1996: 188). Huffman suggests that the seated position of the burials is significant since it is associated with high status. The evidence of the 12,000 gold beads in the burial of the female suggests she was ruler in her own right since these were not
found in the other graves of the men. Later (referring to the rulers of Great Zimbabwe) Huffman quotes from early Portuguese accounts (Theal (1964 (1898): 368) the Mazarira (great wife and sister) of the Mutapa king in fact supported Portuguese requests for trade’ and adds, ‘although female status is secondary in a structural sense, actual status would be contingent on the forces of individual personalities. Thus there could have been times when a ritual sister and royal mother had greater standing than their male counterparts’ (1996: 188). Mapungubwe was built around a sandstone hill rising sharply from the valley adjacent to the Limpopo river. The burials mentioned above were found at the summit along with the remnants of houses built over many decades.

Central to the importance of Mapungubwe was participation in a network of trade and exchange: firstly with the coast and indirectly with other states on the far side of the Indian ocean. The compilation of travellers’ accounts of the coast by Al-Idrisi in the first part of the 12th century indicated that the Arabs knew of landing points and collection places along the coast known collectively as Sofala. The city state of Kilwa on the southern Tanzanian coast was first occupied in the 8th and 9th centuries by a largely fishing community. Shell beads were common and the presence of spindle whorls (clay weights for the end of spindles) is evidence for the manufacture of cloth, suggesting cotton was spun for trade with the interior with ivory being the major export in return for ceramics from the Persian gulf. By the 9th century glass beads and other goods from the coast had been received at Shroda. Copper and iron were also traded, in metal form which could be heated and forged on site. Ivory and animal skins were among early exports from the Limpopo valley (Hall, 1987: 78).

Al Mas‘udi, who sailed the east African coast in AD 915 noted that the ‘land of Zanj’ produced ‘wild leopard skins’ which were both worn by the people themselves and exported to Muslim countries where they were used as saddles. Al Mas‘udi reported that the Zanj hunted elephants by throwing down the bark and leaves of a certain tree for the elephants to eat and then ambushing the elephants when they fell down. This probably refers to the fruits of the morula tree (Sclerocarya caffra) which are known to intoxicate elephants today, as well as providing the ingredients for marula beer made by women in Venda and other parts of Limpopo and consumed on ritual occasions by communities. Marula trees and their fruit are never owned by individuals but belong to the entire local community, an indication of their importance in traditional economies.

By the late 10th century there was an established flow of goods between the coast and sites in the interior such as K2 and Mapungubwe. Quantities of glass beads and fragments of ivory were found in the middens at K2 and numerous similar beads from the excavations at Mapungubwe. Sciama notes that beads, along with textiles, are among the foremost items of long distance trade. Moved from continent to continent they were often used in conjunction with or in the place of cowries which were brought to the east coast of Africa from the Pacific ocean since the 10th century BC, as later on were turquoise from Egypt and lapis lazuli from Afghanistan. Glass beads were made in Egypt, Iraq and India as early as the second millennium BC and traded by Phoenicians in the first half of the first millennium. In Africa the possession of certain types of beads was an indispensable requirement to sanction royal status. They figure prominently in early ethnographic descriptions of royal investitures in Nilotic kingdoms. Francesca Declich recorded that the founding ancestress who led the Somali Zigula out of slavery and who presides over women’s initiation rituals, Wanankhucha, is believed to have been buried entirely covered with beads. Tiny white beads like those sometimes found by her grave are required in all women’s transition rituals (Sciama, 1998: 16). Eileen Krige describes a typical Lovedu woman in the 1930s wearing red ‘salempore’ (sometimes called ‘Madras’) cloth, ‘while from her neck dangles the ubiquitous snuff box on a necklace of plaited string, holding three or four treasured heirlooms, large deep blue or white beads, and perhaps some small blue, red or yellow ones of the kind that were
brought from Rhodesia long before Europeans had come’ (1980 (1943): 17), suggesting that for the Lovedu as well as the Somali, beads were an essential part of initiation into womanhood.

At Mapungubwe there was also evidence of a thriving trade in local ivory making, with bracelets of differing widths and fine bone tools used to work the ivory of which there are more than 600 examples. Spindle whorls at Mapungubwe are evidence of a weaving industry, suggesting cotton plants had already been introduced from central Asia or India (Hall, 1987: 79).

The differences in wealth and status that accompanied this economic system were reflected in patterns of settlement and the association of centres of power and importance with hills as at Mapungubwe and elsewhere. The large collection of clay figurines from Schroda suggest it was a religious centre as well as one with pioneering trade connections. Hall comments that since the only grindstones to come from the hilltop at Mapungubwe come from one side, that side ‘have been the area used by royal wives and their servants’. The other end, which he thinks may ‘have been reserved for the king and his entourage’ was reached by a special staircase and had stone walls and artefacts associated with men’ (1987: 82). Hall thinks that the rulers of ‘any state system must have some form of coercion through which rulers ensure that their subjects acknowledge their right to levy tribute’ and thus he feels that ‘the rulers of Mapungubwe and elsewhere must have commanded military power although there is no evidence of this in the archaeological record’ (my italics) (1987: 89). However, we know from the ethnography of the Lovedu that considerable power was wielded by queen without the use of military force and the same may well have held true for the female rulers of Mapungubwe and perhaps Great Zimbabwe.

Voight records that the last phase of settlement on the hill at Mapungubwe represents the end of the Early Iron Age in the Limpopo valley. No sites have been identified which fall within 1200 to 1400 AD. She suggests that the presence of rattus rattus in the area, together with the relatively densely populated settlement may indicate the destruction of the population through Bubonic plague, at the time ravaging Europe and the Near East. Such a disease would explain the depopulation of a previously much favoured area and opened the way for tsetse fly to encroach into the area and prevent repopulation by herders (1983: 135).

**Great Zimbabwe**

As trade with the Indian ocean grew in scale and gold became a major export from the interior while Indian cloth was imported, the nearer peoples on the eastern highlands of present day Zimbabwe organised trading networks to their own benefit and the routes to the ocean were taken over by Great Zimbabwe and Khami. The walled structures of Great Zimbabwe, replicated to a lesser extent for hundreds of miles to the north and south and including the Lovedu, were known as madzimbahwe, the Shona term for the residence of a chief. Most of these stone walled structures are on the edge of the highland plateau in present day Zimbabwe, looking over the lowlands of the Limpopo and Sabi rivers to the south and east and the Zambezi to the north. Garlake describes the structure now known as the Elliptical building thus ‘on a low granite shelf stands the greatest structure of Great Zimbabwe, once known to the Karanga as ‘the house of the great woman’ or Mumbahuru. The outer wall of this building is over 800 feet in g, 17 feet thick and 32 feet high...it is by far the largest single prehistoric structure in sub-Saharan Africa and has been estimated to contain 188,000 cubic feet of stonework, more than in all the rest of the ruins combined’ (1973: 27). Early visitors to the ruins, including the German traveller Carl Mauch, were convinced that the ruins had been built by the Phoenicians and were the residence of the biblical Queen of Sheba. Garlake records that on his last visit to the ruins, Mauch cut some
wood from the collapsed lintels of the doorways of the Elliptical building and found it reddish, scented and unaffected by insects ‘similar to the wood of his pencil’ Mauch claimed that the wood was cedarwood, ‘brought by the Phoenicians from Lebanon’, he surmised that ‘the great woman who built the rondeau was none other than the Queen of Sheba’. Garlake notes that the properties of the wood Mauch found are similar to those of Spirostachys Africana, or Cape sandalwood, a local hardwood used elsewhere in building the walls of the elliptical building and mentioned by Wilmsen as an important trade wood in the Kalahari (1989). Cecil Rhodes took up the fantasy of the Queen of Sheba having bought plundered objects, such as a soapstone bird, from Great Zimbabwe from the German trader, Posse. Rhodes suggested ‘Zimbabwe is an old Phoenician residence’ and that the peacocks of the Bible could be read as parrots, green parrots being common in the area. The fascination of Europeans with Great Zimbabwe was not so much with the ruins, which they did not understand, as with the gold ornaments and objects found associated with numerous burials some at Great Zimbabwe and at sites such as DhloDhlo, Mundie, Chumunungwa and Mtelegwa ruins. Here were revealed skeletons buried with gold necklaces, bangles, gold wire and beads but the hoards of gold the prospectors hoped for did not materialize.

Conclusion

This paper has sought to provide a glimpse of the role of women as ritual leaders, as powerful sisters, as petty chiefs and, for the Lovedu and perhaps the unknown denizens of Mapungubwe, rulers in their own right. The feminine aspect of divine kingship has been relatively neglected in the literature. Royal women in southern African ethnography, with the exception of the rain queens and the Swazi ‘queen mothers’ are most often recorded as wives and mothers, and not as powerful beings in their own right. Power for these women, I have tried to show, lay in their ability to command of trade and tribute which would have been linked to ritual authority as well as the fertility of the land and its people, seen above all in the mystical ability to command life giving rain.

References


Ralushai, N.M.N & J.R.Gray. 1977. 'Ruins and Traditions of the Ngona and Mbedzi among the Venda of the Northern Transvaal'. Rhodesian History 8: 1-11


Stranger Queens: a discussion of some aspects of the ritual and executive roles of women rulers and court officials in pre-colonial empires in East and Southern Africa


The role of rural women in sustaining small-scale community development problems and successes: A case study of KwaNdaya Production Centre Umbumbulu KwaZulu-Natal

Mendi Hadebe* – mrehadebe@pan.uzulu.ac.za
Department of Development Studies and Anthropology
University of Zululand
South Africa

Abstract
It is becoming increasingly realized that community development cannot separate itself from women. The UN decade for women highlighted the importance of women in the development process, establishing that women perform two thirds of the world’s work, receive only ten percent of the world’s income, and own only one percent of the means of production (Mosse, 1993). The aim of the study is to explore the role of women in small-scale community development. KwaNdaya case study will be used to determine that women play a major role in sustaining community development in spite of the challenges they are faced with on daily basis.

1. Introduction
Research in most of sub-Saharan Africa shows that the activities of women in support of their families usually determines how much food is available for family consumption and hence the nutritional status of family members living at home. Women make their most effective contribution to family nutrition chiefly as food producers by means of small-scale farming and livestock raising, but they also buy food with cash that they earn (Price, 1982). The focus of this article is on the role played by rural women in small-scale community development. It tells a successful story of KwaNdaya co-operative in KwaZulu/Natal-Umbumbulu. Mendi Hadebe was the facilitator of phase one in this project when she was appointed as a social consultant by Ilembe District Municipality in 1999-2001.

The KwaNdaya case study will provide evidence that by including women in development positive results are being achieved, since research proves that women are seen as the backbone of rural development and by using them sustainability will be achieved.

2. Background to the KwaNdaya Project
KwaNdaya community gardens were chosen as a pilot project for the Community Production Centre (CPC) concept in the year 1999. These gardens were started as community garden where individual women who were community members had separate plots for food production with the main aim of feeding their families. The community were also included in the decision making process. These gardens were chosen by Ilembe to be extended, a community meeting was called by the KwaNdaya councillor (the late, Mr. B. Ngcobo), with the special permission for such a meeting from the Inkosi/Chief of the area. The purpose of that meeting was to explain to people that the community garden would be extended and that the government was going to

Mendi Hadebe is a Lecturer in the Department of Development Studies and Anthropology, University of Zululand, South Africa
The role of rural women in sustaining small-scale community development problems and successes: A case study of KwaNdaya Production Centre Umbumbulu KwaZulu-Natal

fund the project. All the community members agreed to that proposal and ment of the local community, especially women. The following tasks were expected to be performed by women: skills development, site clearance, levelling, block building, site construction works, fencing and many others. The site-supervising consultant had to provide a larger than normal input so that skill were also happy about it. The principal purpose of upgrading the existing community garden was to provide employment for the local community and to create business opportunities. The project was feasible with regard to need/desirability on the part of the community and also from the technical point of view. It was envisaged that the proposed upgrading of the community garden would be an economically viable project that would improve the standard of living for the local community by providing them with jobs and an income from produce sold. The National Department of Public Works (NDPW) provided funds under a budget from the Community Based Public Works Programme (CBPWP) and Ilembe District Municipality’s officials, together with the KwaNdaya community, started the project. Most community members held ownership of the land as they had Permission To Occupy (PTO) certificates which are similar to Title Deeds. These members made 10 hectares of land available for the project on a voluntary basis for the benefit of the whole community. KwaNdaya community garden was developed under the KwaNdaya Cluster, which also included market stalls, a crèche for day-time child care, a poultry house and the community sports field. The community was represented by the Ndaya Development Committee, which reports to the Umbumbulu Standing Committee, that in turn fell under the Ilembe Regional Council and now falls under Ugu District Municipality. Ndaya Development Committee is the organization overseeing all the activities with regards to development, maintenance, administration, and many other official functions within the Umbumbulu region. Furthermore, it was proposed by Ilembe, as a requirement of the Department of Public Works, that the project be developed using emerging contractors, Small, Medium and Micro Enterprises (SMMEs) and that it place emphasis on the involves development and the involvement of the local community did not slow down the construction programme.

3. The Projected Effect of the Project on Local Economy
The effect of the KwaNdaya community project on the local community was very positive, as it was expected that the project would provide sustainable employment opportunities once it was functional. The project was also going to alleviate poverty by providing survival means to the poorest of the poor, especially women from single-headed households. People were also be empowered with training opportunities during the construction or implementation of the project, and in the long run they were going to be equipped with semi-skilled and skilled knowledge(Ndaya Community Garden Business Plan, 1999:5)

An allocation of R795 000,00 from the Programme for Phase One was made available for facilities in the garden alone: that was the installation of irrigation infrastructure, such as an engine, engine house, pipes for water extraction from the uMkhomazi River, sprinklers, reservoirs and fencing. An allocation of R2.5 million was going to augment the implementation done in phase one. The project team was also appointed for the KwaNdaya Cluster (Management Report IDT, 2003:1)

4. Locality
The KwaNdaya area is a remote rural area of KwaZulu/Natal, with a lot of hills, situated within the uMbumbulu sub-region about 30km from the town of Amanzimtoti under the Ndaya Tribal Authority called ‘Isumhla’, within Inkosi/Chief Z. Mkhize’s area. The climatic conditions are fairly moderate with both rainfall and temperature conducive to vegetation
and agricultural production. KwaNdaya experiences more rain during the mid-year and a little drought towards the end of each year, whereas during the beginning of each year the rain is moderate. However, since the garden is along the uMkhomazi River, it is not affected very much even in dry seasons by lack of water.

5. **Department of Public Works and Poverty Reduction**

Public works have been widely used in fighting poverty throughout Asia, Africa and Latin America. The rationale underlying public works programmes is that government capital spending can be used to improve the productivity and earning power of poor people and their assets, for example, by providing access roads to markets or irrigation for agriculture. Such projects form part of the strategies of poverty reduction that attempt to alleviate high and persistent levels of unemployment and lack of infrastructure, particularly in deprived rural communities. They are based on the idea that labour is the most abundant asset of poor people: therefore, if the demand for their labour is increased, then it follows that their incomes will increase when working in projects, and this will also increase their ability to generate more income. Labour-intensive public works programmes have been shown in particular to improve rural women's access to income (Badsha, 2001:3).

6. **The Community Based Public Works Programme**

In South Africa, it has been intended to create jobs, especially in rural areas. This is a Presidential Lead Project (within the National Public Works Programme). The Government of National Unity in May 1994 adopted the National Public Works (NPWP) as one of the key mechanisms for the implementation of the Reconstruction and Development Programme (RDP). The aim of the NPWP was to reduce unemployment, to empower communities, to create physical assets that would improve the quality of life of the poor, and to provide education and training to the unemployed, especially women, youth and rural dwellers.

A strategy called the Community-Based Public Works Programme (CBPWP) was adopted to kick-start the programme and ensure short-term delivery. CBPWP is intended not only to provide immediate employment but also much needed support for development of agricultural infrastructure, while simultaneously providing training for workers and building capacity in local institutions. The government has also used the poverty programme to encourage the use of black contractors, thus ensuring greater participation of black people in the economy. Clusters of projects were designed in collaboration with local communities to facilitate sustainable economic development.

7. **The Operation, Monitoring and Management Phase**

When the community garden pilot project came to an end of its implementation phase, the KwaNdaya community had to take over its operation, monitoring and management. The same committee was still responsible for this phase, as was stipulated in the project's constitution. The project was then officially handed over by the project team to the KwaNdaya community. After that a community meeting was held, at which the committee gave the community feedback on how they were intending to proceed with the project. It was agreed at the meeting that every member of the community could participate in the project by paying a joining fee of R250.00 per family for the whole year. This included the committee members. This fee was intended to 'kick-start' the project in its next phase. About 60 community members joined the project and they worked together successfully. A bank account had been opened by three members of the committee with assistance from the facilitator prior to this phase. By using this, they managed to save money and after about six months they started to achieve some incentives from the project in money form. They were
paid between R200,00 and R500,00 each per month. This varied by season: some months they were paid well and in other months they were not paid at all.

8. The Extension of the Garden Project to the KwaNdaya Production Centre

In 2002, funds were made available by the Independent Development Trust (IDT) for the project to be extended from the KwaNdaya Community Garden to the KwaNdaya Production Centre, under the Community Production Centre (CPC) programme. The overarching goal of the project was to develop production activities and infrastructure that would be controlled by the Ndaya community and linked to the market. The project was going to consist of fencing an additional eight-hectare piece of land which would increase the current horticultural garden from 10 hectares to 18 hectares and building a production activity centre which would include a vegetable pack house including shade equipment, a chemical and input storehouse and an administration block combined with a play centre. Moreover, a community nursery and auxiliary developments which would include a farm road, human access points, small garden bridges, a two-door gate, 3 small gates, and a 10 hectare banana plantation were also planned to be implemented..

The project was open to all those community members who were willing and committed to work on it. All community members were welcomed without any discrimination. It happened that for this phase all those who were willing to work were women; therefore women now run the project. They have formed a co-operative, which means that they work together in order to reach a common goal. KwaNdaya co-operative members have joined the project on a voluntary basis and no member has been forced to join. They work for the sustainable development of their project without excluding anyone who wants to benefit from it.

The success of the KwaNdaya project can be seen in the fact that women are still managing and working on this project successfully. They generate income from it: they have created job opportunities since they work on a daily basis: they alleviate poverty and are now able to feed their families: their standard of living has improved: and they no longer experience problems associated with malnutrition. More specifically, they produce various types of vegetables for selling and for household usage: they market their produce to local community members and to neighbourhood business people who own supermarkets or big markets, such as Clairwood Market (vegetable suppliers) in Durban: and they also fill large orders for various service providers who in association with the Department of Education feed learners in schools in the Umbumbulu area. The Department of Health also buys vegetables from them for supplying to various hospices. In 1993 they managed to make a profit of R75000,00 and they bought a good second-hand tractor as an investment for the project: they are able to generate income by hiring out the tractor to other people. They are, nevertheless, facing some challenges in regard to sustaining their project. One of their main concerns is the high death rate among the youth due to HIV/AIDS. Also, women presently involved in this project are becoming older and this in itself is a major challenge. (UZ Researcher 2005:2)

9. Conclusion

The KwaNdaya Production Centre project proves that women still play a vital role in development as principal producers of food, managers of household resources and custodians of family welfare. As in most other rural areas of developing countries, women are still often confronted with role conflict, and constraints associated with cultural norms, values and beliefs. KwaNdaya women also sometimes experience such challenges as the theory that, since black rural women do most of their work in the agricultural sector, which is regarded as the informal sector. This project proves what the White Paper on Land Policy asserted, that land redistribution gives priority to rural women, in particular to emergent farmers.
Women have been especially earmarked for assistance because they have vast experience of group participation in many development initiatives (DLA, 1997).

The KwaNdaya project also supports what has been highlighted by the government as a concern with the development and empowerment of women, which has been emphasized in official development policy documents, particularly the Reconstruction and Development Programme (RDP). In his State of the Nation address in 1994, President Mandela also maintained that true freedom could be achieved only when women have been emancipated from all forms of oppression.

References


UZ Researcher, May 2005
“The boldest, most comprehensive strategic plan on AIDS in the world” 50 fails to address gender

Sunet Jordaan51 sjordaan@pan.uzulu.ac.za
Department of Anthropology and Development Studies
University of Zululand
South Africa

Abstract

The South African government struggles to come to terms with the Human Immunodeficiency Virus (HIV) pandemic raging in South Africa. Originally, denial of the existence of HIV/AIDS, inconsistencies over the link between HIV and AIDS as well as unclear standpoints from the South African government regarding the causes of HIV inhibited all prevention strategies.


HIV/AIDS prevention strategies should form part of development planning and one of the problems of development planning is that it can be gender-blind (Baden and Goetz, 1998).

Key words:
Gender, HIV/AIDS, South Africa, prevention strategies

Introduction:

The Department of Health finalised a new Strategic Plan on the fight against HIV/AIDS and STIs early 2007. This plan is supposed to give a framework and guidelines on the fight against HIV/AIDS in South Africa until 2011. This plan has been commended by many and criticised by few. In this article, I will construct the term ‘gender’ and describe why it should be addressed in policies and programmes. I will then broadly discuss the history of AIDS prevention strategies in South Africa and then determine of the new strategy address gender.

Gender and health

Gender should be part and parcel of research, political as well as theoretical approaches in development, as well as other fields of study. But the term ‘gender’ is interpreted differently by different actors. Those involved in policy making and planning have different uses of the term when compared to academics or social scientists (Cornwall, 2000:20). I will, therefore, define the term as it will be used in this article.

Gender can be described as the lives of men and women, the work that they do, their incomes, their roles and their relationships, as they are formed by the society they live in and

50 Zwelinzima Vavi (in South Africa Info, 15 March 2007), General Secretary of COSATU on the new HIV/AIDS/STI Strategic Plan 2007-2011 of South Africa
51 Sunet Jordan is a Lecturer in the Department of Development Studies, University of Zululand, South Africa
their social norms and traditions. Gender is important because of the differences in the
treatment of men and women. White (2000:38) explains that “gender is thus not only about
persons, but also very importantly about values” not only about social inequality, but also
about social meaning.” Very often writers tend to focus only on women in the discourse on
gender, excluding men and their relationship with women.

Men should be involved in the gender and development arena. They are just as much part of
gender as women are. If men are not part of the gender discourse, they are excluded from the
influence of gender on policy.

**Gender dimension of HIV/AIDS in South Africa**

South Africa is the country in the world with the most people living daily with HIV and
where the most rapid growth in the HIV-pandemic in the world is occurring (Dorrington et
According to Dorrington et al, (2006) 17.8% of all infections in South Africa are adult men
(age 20-64). For women of the same age, infection rates are 19.2%. The gender dimension of
HIV/AIDS in South Africa is, however, more apparent among the youth. Males aged 15-24
make up only 3.7% of all infections, while young women of the same age group contribute to
16.9% of all infections. Fifty-five percent of all infections in South Africa are women (DoH,
2007).

**Background to the New National Strategic Plan**

In 1992 the National Aids Co-ordinating Committee of South Africa (NACOSA) was
established. The aim of NACOSA was to develop a National Aids Strategy. In 1994 this
strategy was consolidated with the National Aids Plan and was adopted by Government
(DoH, 2000). In 1997 the South African National STD/HIV/AIDS Review was conducted. This
review indicated that there was a high level of commitment from the Ministry of Health
(MoH) to address the problems with regards to HIV. The collaboration between DoH and
other sectors was also highlighted. The most important result of this process was the

By December 2005, no new document was published to follow on the previous Plan. By June
2006, the Deputy Minister of Health, Nozizwe Madlala-Routledge, announced that the new
Strategic Plan for 2007 to 2011 will be launched on World Aids Day, 1 December 2006. On
this day, the Deputy President of South Africa, Pumzile Mlambo-Ngcuka, launched only a
broad framework. It was announced that the final Strategic Plan will be launched in March,
2007. On 14 March 2007, the Deputy President again unveiled a broad framework and
indicated that the final acceptance of this framework will take place later in 2007 in
consultation with all stakeholders.

**Gender and the New National Strategic plan**

The DoH (2000) states that the underlying causes of the spread of HIV are socio-economic
conditions such as poverty, commercial sex work, migrant labour, the low status of women in
South Africa, illiteracy as well as stigma and discrimination. The immediate causes are seen
as behaviour factors such as unprotected sexual intercourse and multiple partners as well as
biological factors such as the prevalence of STDs. In the 2007-2011 Broad Framework the
DoH (2006) focuses on the fact the spread of HIV links to behavioural factors such as
unprotected intercourse and multiple sexual partners. One of the most important 'causes',
according to DoH (2006) is poverty. However, the lack of an adequate district health system
also receives some attention.
Aims and principles of the Strategic Plan
The two primary aims of the NSP is to reduce the number of HIV/AIDS infections by 50% as well as to reduce the impact of HIV/AIDS on the society be ensuring proper treatment, care and support to 80% of all people diagnosed with HIV/AIDS.

The 2000-2011 NSP is based on the following principles:
- Both government departments and civil society have a responsibility in the fight against AIDS;
- It is the responsibility of Government to focus on education, healthcare and welfare with regards to AIDS;
- The different HIV communities should take part in the implementation of the framework;
- There is a focus on the vulnerability of women, but the case of children and people with disabilities receives a special mention;
- People living with HIV should play a role in the national response from government;
- All interventions must be socio-cultural sensitive. A special mention is made of culture, religion, age, gender and language;
- Aspects of stigma and discrimination will receive attention;
- Social mobilisation should lead to sustainable behavioural change;
- The role of FBOs, CBOs, NGOs and the private section should be highlighted;
- Adequate resources must be available to ensure that the Strategic Plan can function according to plan.

The Strategic Plan is then divided into four key priority areas. These priority areas will ensure that interventions are specifically focussed to reach the aims of the NSP.
- Prevention;
- Treatment, care and support;
- Human and legal rights; and
- Monitoring, research and surveillance.

Gendered critique on the NSP
The South African history of discrimination and social inequalities made specific groups (such as women and children) more vulnerable for HIV infection. Because of this, there is a very urgent need of ensuring that all policies, programmes and interventions regarding HIV/AIDS take gender into account. Planning and policy making should be gender sensitive as well as focus on gender-specific aspects such as the vulnerability of women. It is then logical to expect that a new National Strategic Plan will highlight aspects of gender awareness, but that it will also highlight specific gender related policy making and planning.

But the NSP creates a false image of gender awareness. From very early in the Strategic Plan, mention is made of the low status of women as well as gender violence in South Africa (DoH, 2007). This creates the expectation the NSP will be gender sensitive and take into account the special needs of women (and men) in South Africa with regards to HIV/AIDS and STIs.

Gender and the key priority areas of the new NSP
The interventions of the new NSP are contained in four key priority areas. These areas indicate the focus of the DoH as well as National government with regards to the HIV/AIDS crisis in South Africa. Within the four key priority areas of the NSP, there is also specific mention of gender related aspects. I will now highlight only these gender related aspects and indicate problems associated with it.
Gender and prevention
In this regard, government aims to reduce new infection rates in South Africa with 50% by 2011. This will be done, according to DoH (2007) by accelerating programmes that empower women and educate men on women's rights as well as human rights.

According to DoH, 85% of all infection in South Africa is spread by heterosexual sexual intercourse (2007). Sexual transmission interventions will target young people, but will focus on young women. Many studies have shown that virility and multiple sexual partners are indicators for masculinity (WHO, 2003). This is not taken into account in the NSP. Also, factors that inhibit condom use, such as gendered based violence, couples who want to have children and non-consensual sexual intercourse are not included in the interventions regarding prevention.

A comprehensive package will be created to promote male sexual health and address gender and gender-based violence (DoH, 2007). It is not clear what type of package can be created to ensure both male sexual health and address gender violence. It is necessary to create a clearer focus on the increased HIV risk of men if they involve themselves in gender based violence. This issue is not mentioned in this strategic plan.

Programmes will be introduced that address stereotyping of gender identities that contribute to gender based violence (DoH, 2007). It is once again not clear what types of groups will be the focus of this. The assumption is made that these programmes will be created to educate the general society about groups such as men who have sex with men, transgender people and homosexual groups.

In reducing the number of infections, government also aims to increase the accessibility of post-exposure prophylaxis (PEP) (DoH, 2007). Government is not providing any clear guidelines in the provision of PEP. According to HRW (2003) there is inadequate information available in South Africa regarding PEP. Health care providers, the police as well as staff members at rape crisis centres lack information regarding the provision of PEP. The information regarding this is also not available to the public, social workers and health care providers.

The strategy of government with regards to occupational injuries and sexual assault is not clear. Added to this, there are no clear guidelines in the provision of PEP in the case of condom breakage when the man is known to be infected with HIV.

Gender and treatment, care and support
Government aims to reduce the impact of HIV/AIDS on families and households by ensuring that 80% of all HIV positive people as well as their families receive treatment, care and support by 2011 (DoH, 2007). Government aims to reduce maternal mortality related to HIV/AIDS by ensuring that women-specific programmes are in place. Once again, it is not clear what is meant by women-specific programmes.

Specific focus areas regarding Priority Two include mother to child transmission as well as the care of children and pregnant women. Although preventing MTCT is a valid approach in the prevention of HIV, it stereotypes women (Rao Gupta et al, 2003:29). Women are very

---

52 The National Executive Committee of the ANC (2002) announced that the efficacy of prevention of HIV/AIDS with ARVs after sexual assault or needle stick injury is not proven. For that reason the decision was taken not to provide ARVs to public health institutions for the purpose of prevention. The MoH was however instructed to do more research on the topic.
often seen as ‘vectors’ of HIV. They are blamed as the transmitters of HIV to their children as well as to the broader society (Gorna, 1996:214). The link between fatherhood and HIV is often neglected and the WHO (2003) also indicates that it is needed to involve both men and women in prevention of MTCT. It is ignored that men can pass HIV to their children through their pregnant mothers. Foreman (1998) explains that few men are aware of their HIV-status and only becomes aware of it when a child gets ill with AIDS-related diseases. Men who know that they are HIV-positive risk passing the virus on to future children because of their refusal to use condoms. In spite of this, only pregnant women are targeted in Key Priority area Two. There is a clear need to also target the fathers of unborn children.

**Gender and research, monitoring and surveillance**

Government emphasizes that research and monitoring is important for policy as well as managing of HIV/AIDS. One of the most gender-sensitive priorities in this regard is a clear focus on microbicides development (DoH, 2007). The idea of this is creating female-controlled technology that would put women in control of HIV-prevention. The biggest criticism of this is that the responsibility of prevention lies only in the hands of women. The positive aspect is that women are then in control of a prevention method (Ramjee, 2000). This is two sides of the same coin.

Another gender related focus of this key priority is to support research regarding male circumcision. Research carried out by the World Health Organisation (2007) in South Africa, Kenya and Uganda has shown very clear benefits of male circumcision. According to WHO the risk of infection reduces by 60% if heterosexual men are circumcised. One of the greatest benefits of male circumcision is that it safeguards men to some extent in situations where condoms are not used. The aim of promoting circumcision should not be to replace condom use, but to add additional protection for men. According to Sawires et al (2006) male circumcision reduces the prevalence of HIV amongst men, and indirectly also protects women. To create a sustaining benefit, it is important that circumcision takes place in sterile circumstances. Sawires et al (2006) also question if male circumcision can not be seen as a form of genital mutilation and warn that the promotion of male circumcision can lead to arguments for female genital mutilation. Although research by Sawires et al (2006) shows very clearly that male circumcision has a health benefit that is clearly not found with female genital mutilation, this aspect should be considered.

**Gender and human and legal rights**

In this area there is a very specific focus on the rights of women and girls. The aim is to reduce the risk of women and girls being infected by reducing poverty amongst women. Secondly will there be a focus on ensuring that current laws regarding gender-based violence are implemented. Thirdly, it is mentioned that the needs of women in abusive relationships be addressed and lastly that no laws, policies or customs discriminate against women and girls in South Africa (DoH, 2007).

Cultural practices very often inhibit women from discussing sex and asking their partners for the use of condoms. These types of taboos can increase the risk of HIV-infection (Foreman, 1999). The reluctance of people to discuss the occurrence of anal sex (among men and women) also increases the vulnerability of women to be infected with HIV (Foreman, 1999). Qwana (in Gender-Aids 2004) indicates that among Sowetan women that responded in her study up to 14 – 18 percent of women admitted that they have practiced anal sex. She indicates that discussing anal sex is still a cultural taboo. Unprotected anal intercourse has the highest risk of transmitting HIV. This information is very often not highlighted in prevention programmes. The WHO (2003) also supports a greater focus on the risk associated with anal sex.
Other cultural practices can also be blamed for the vulnerability of women. The early pregnancy of girls is given as one of the reasons by Reid (2001). According to Rweyemamu (1999) and HRW (2003:54) some women insert herbs and powders into their vaginas to reduce the amount of vaginal secretion, so as to keep the vagina in a virgin state and to make it 'dry and tight'. Ramjee (2000:282) reports that other substances used are patent medicines and household detergents. Such dry sex practices can lead to abrasions in the vagina during intercourse can result in the breaking of condoms, and these increase the risk for women of contracting the virus (Abdool Karim, 1998: Busse, 2003).

Men are often blamed for their refusal to use condoms during sexual intercourse. This refusal is based on notions of masculinity. Cultural factors also prevent some women insisting on the use of condoms. According to Rao Gupta et al (2003:11) some women in Brazil, South Africa, Jamaica and India also don't like using condoms. Some young women (own research) alluded to the fact that many young women and girls, claim that they do not like using condoms as that takes away some of the romance in lovemaking. Some believe that if a condom falls off during intercourse it will get lost or travel to the throat. Another belief is that a condom attaches itself to the woman’s reproductive organs and these will come out when the condom is removed. (Focus group discussion, 3 August 2004).

Conclusion
It is realised by the South African government that women are more vulnerable than men to be infected with HIV. It is also clear in the new National Strategic Plan that government is aware of the special needs of women. There is however no indication that government takes into account gender and men in the prevention programmes. How this will increase the vulnerability of women is also not attended to in the Strategic Plan, which is a very important document.

It is very clear from this document that the DoH indeed tried to introduce the idea of gender sensitivity in their planning. However, as seen from this paper, not all aspects were included and many areas of gender insensitivity and even gender blindness still exit in this new Plan. One of the areas least focussed on is men and masculinity. HIV/AIDS prevention can't be only the responsibility of women. They are already overburdened with care and support and it is absurd to ignore the roles and responsibilities of men in HIV/AIDS prevention. When taking gender into account, all aspects should be dealt with. Culture, history, biological aspects as well as the relationship between men and women should be addressed. Accepting and addressing the differences between men and women are the only long term solution for ensuring that HIV/AIDS prevention policies and programmes are successful. With this second Strategic Plan, the South Africa government have not used the opportunity to acknowledge and address these differences. The result of this is a prevention strategy that does not take the reality of gender in South Africa into account. This is an extremely dangerous situation, as gender is about the relations between men and women, and most AIDS infections are linked to the relations between men and women. HIV/AIDS prevention in South Africa can’t afford not to take gender into account.

References

ANC, 2002. Lend a caring hand of hope: Statement of the National Executive


Focus group discussion, 3 August 2004, KwaDlangezwa


The boldest, most comprehensive strategic plan on AIDS in the world fails to address gender.


Evaluation of reunification programmes rendered by service providers with respect to street children and their families/households.

S.J. Magagula\textsuperscript{53} smagagul@pan.uzulu.ac.za,  
Department of Social Work  
University of Zululand  
South Africa

Summary
This research evaluates the reunification programmes that are supposedly provided to street children by the service providers. The research also seeks to know the role played by the government policies to eradicate or improve the said escalation of street children. It examines why street children abscond from the institutions and return to the streets. The research speculates that they behave this way because no reunification programmes are used in these institutions. The research also asks whether if such programmes are available they are ever evaluated and whether or not they are effective enough. If no, who are the people involved during their evaluations? What can then be done in order to improve the lives of these street children? Previous research mainly concentrates on the causes of street children. There is no research that has focused on evaluating the reunification programmes that are rendered by service providers in the child care institutions. Lastly, the researcher intends to draw a Behaviour Modification Treatment Model (BMTM) and a Participatory Action Research Manual that will be used by the agencies who deal with homelessness children be it on their own choices or through push and pull factors. Hopefully this manual will rehabilitate the misbehaviours of these children.

Introduction
There are many researched documents that have been written with particular reference to street children. Some authors appear to have concentrated on quantitative study of either children on the street and or children of the street. The distinction between the two is that the children on the street are those who remain permanently on the street, while children of the street are those who may remain on the street for a day but return to their respective families in the afternoon or evening.

A quote from Le Roux (1996) in Hickson & Gaydon (1989) notes that it is believed that in South Africa, street children are the results of apartheid ideology, a system in which black children were the worst victims of apartheid as compared to other groups. The vast majority of an estimated 9,000 street children in South Africa (SA) are black. There are virtually no white street children in SA. There are 10,000 white children in 160 state-registered and subsidized children’s homes. On April 27, 1994, SA embarked on non-racial democratic elections with the hope of bringing about change. This was highlighted by the awarding of the Nobel Peace prize to Mr De Klerk and President Nelson Mandela in 1993. This prize was symbolizing that children’s lives were to be improved by the said two men. But this again brought no change to the rife stage of street children who wonders around the streets even now.

\textsuperscript{53} S.J. Magagula is a Lecturer in the Department of Social Work, University of Zululand, South Africa
Street children do not benefit from traditional facilities hereinafter called places of safety, shelters or drop-in-centres which are meant to rehabilitate the anti-social behaviour to the expected good behaviour. It is, however, noted that there are children who live on the streets because of no choice of their own. They are often from very poor homes where their basic needs such as food, clothing and shelter are not met. This research therefore intends to urgently investigate the operation of the shelters and look at their reunification programs in order to assist with the formulation of new strategies and the compilation of standardised manuals for all children shelters. The research also evaluates the existing policies and whether or not they aggravate the problem even further.

**Motivation for the Study**

The researcher worked as a field social worker for the Department of Social Welfare and Population Department in Ongoye and Inkanyezi Social Welfare Offices. In the course of her work she became concerned about the prevalence of children who left their homes and preferred to live their lives on the streets. When the researcher was pursuing her studies in the United States of America this phenomenon was also noticed. This proved that the problem is experienced globally and is in urgent need of attention. In South Africa many of these children are apprehended by authorities such as social workers, traditional leaders, and or police and taken to the Places of Safety, temporary refuge, while their circumstances were being investigated by social workers. Sometimes the worth and dignity of street children are are not respected. For example on May 17 2004 in Durban Metro, street children were collected, transported and dumped outside the city. This was deliberately done in order to ‘clean’ the city as part of the preparations for the arrival of Indaba (The Mecury, 18/05/2004,p4). When asked about their desertion from shelters they cited what they referred to as a boring life at the institutions. Others accused the care workers of bullying them. Shelters have a duty to educate and instruct the children, thus enabling them to become hard-working dutiful and socially adjusted individuals without the use of abusive punishment to them (Steven & Cloete, 1996). It would appear that the rehabilitation measures under which the institutionalised street children are treated do not encourage them to effect any changes in their behaviour and their perceptions of street life. This is therefore begs the question as to what needs to be done differently, or more appropriately or professionally. It is an issue that needs a thorough research investigation. The comments from these escapees influenced the researcher to desirer to look at the programmes operating in these shelters in order to evaluate their efficacious nature in dealing with this problem. If inadequate, the question is what needs to be done to enhance their operation and achieve the desired results.

The final motivation for undertaking this study was propelled by the fact that Netherlands countries such as Zimbabwe, Angola and Sudan where similar problems exist, devised a number of programmes meant to reunite these children with their families. Notable in South Africa there are thus far no existing programmes developed to eradicate the phenomenon street children.

**Definition of Concepts**

It is worth defining some of the concepts involved in this research such as: street child, homeless youth, imikhukhu, family, family disintegration, network, cultural competency, organisations, hard-core, curfew laws, neo-naticide, The Social-exclusion theory, Ecosystem Theory and evaluation.

*Street child* is defined as a youth or adolescent who lives on or near the streets of urban areas in relative independence from his or her parental home (Baker, 1999:130). *Homeless youth* is a term referring to a child with a condition of being without a home. *Imikhukhu* refers to informal settlements. *Family* is a primary group whose members assume certain obligations towards each other and generally share common residences. *Evaluation* refers to a process of determining whether a given change or effort was worthwhile (Kirk-Ashman & Hull, 2001:230). *Network* refers to a formal or informal linkage of people or organisations.
that may share resources, skills, contact and knowledge with one another. Programs on the
other hand are relatively permanent structures designed to meet ongoing client needs. Cultural competency is a set of congruent behaviours, attitudes, policies and structures which come together in a system, agency or amongst professionals and enables that system to work effectively within the context of cultural difference. Organisations are social entities that are goal directed, designed and deliberately structured with coordinated activity systems and are linked to the external environment (Kirk-Ashman & Hull, 2001:240). Hard-core is a child who has lived on the street for more than three months. Curfew laws are regulations that specified persons, for example children restricted off the streets at a set hour of the evening. “Umalume” (uncle) is a Zulu name referring to somebody’s mother’s brother not biologically related. Social-Exclusion Theory is a theory that focuses on social inequality in terms of economic, political, land and cultural competence (Figueroa, 1999). Ecosystems Theory is the study of laws, conditions, principles and ideas which are concerned on the one hand with a human’s immediate physical environment and on the other hand with the human’s nature as a social being and the study of the relationship between the two factors (Carol, 1999).

**Theoretical perspective**

The process of becoming a street child and the effects thereof do not occur in a vacuum but with accordance to a number of individual and environmental variables. (Maphatane, 1994: 22). In order to be able to understand this process, it is necessary to go beyond the family and examine other factors within the social environment. This is the main reason why this study found researcher considered it important to use theoretical models which help to provide a more unified explanation of the phenomenon and also facilitate the development of principles for intervention.

When trying to restore the social functioning of an affected human being a Multidisciplinary Approach is often useful. However for the benefit of this research only a few approaches were used based on their relevance, that is The Social-Exclusion Theory, Ecosystems Theory and Evaluation Theory were observed as the best.

The Social-Exclusion Theory focuses on social inequality in terms of economic, political, and cultural competence. The evolution of urbanization and political pressures forced people to involuntarily move into cities without knowing the difficult lives that lay ahead of them. The families of street children have no financial means of adequately supporting their children. As a result some people live in “imikhukhu” (informal settlements) others in the dilapidated houses. In Durban Station for example, people have imikhukhu where they live with their young ones. They generate income by selling craft work to survive or working as domestic servants. Their children are not cared for, and as a result, some become street children. The logical consequence of all this is that those excluded from the labour market become the poorest.

The Ecosystems Theory on the other hand involves the study of laws, conditions, principles and ideas which are concerned on the one hand with a human’s immediate physical environment and on the other hand with a human’s immediate physical environment versus the human nature as a social being and the study of the relationship between the two factors (Meyer & Moore 2002:82). Many people picture the life as a journey during which every human being has positive gains from infancy to young adulthood. Their abilities and habits do not merely ‘mature’ on their own as part of the nature’s plan. Parents, teachers and other important people contribute in the nurturing of young people and showing them how to behave in new way.

People are changed through their experiences, as is the case of street children. Due to environmental factors, people have even ignored the Municipality Laws in order to live their ‘easy’ ways. For example immigrants from Zimbabwe keep on illegally arriving in South Africa in order to find ways to survive despite being arrested daily. Environmental forces therefore have a significant impact on human lives because if these immigrants were not
forced by bad economic situations in their country, they would not dare risking with their lives.
Programme evaluation research is about establishing whether social programmes are needed, effective and likely to be used (Terre Blanch & Durrheim, 2002:209) Evaluation research track the efficacy of social programmes not financially but in human and social terms.

**Research Design and methodology**
A research design is in response to the question “How am I going to achieve my aims and objectives?” The designs employed in this study were Exploratory and Descriptive Designs Participation Action Research (PAR). PAR researchers argue that the “...authentic knowledge of the human and social world can only be gained in the process of attempting to change the world and that authentic change can only happen when it is accompanied by shifts in the knowledge-base of those involved.” (Terre Blanche & Durrheim, 2002:230). PAR is associated with hands-on-small-scale research that involves practical and real world problems and issues. The emphasis is on the empowerment of the most marginalised and oppressed groups in society, the aim being to uncover truths with people, rather than about people PAR encourages egalitarian research relationships and the full involvement of those being researched in every aspect of a research project, from initial conceptualisation to final implementation. When citizens participate in research they do not merely remain the objects of a study, but become full partners in the research process and committed to its success. This design is mainly dominated by a bottom-up approach versus a top-down approach. The same applies to this study, where service providers, street children and families/households were part and parcel of the development of new strategies for the formulation of reunification programmes and their evaluation.

Triangulation method was used this includes unstructured interviews whereby the researcher organised workshops with service providers to collect data about the operation of their agencies. Tape recorders were openly used in order to tape conversations. Another tool used were interview schedules (Questionnaires) designed for the parents, service providers and adults who had already reformed or reunified children the street (case studies). These methods were supplemented by a review of relevant literature and consultation with people involved with street children both inside and outside the study area. Discussions with the street children covered areas such as demographic characteristics, family history, socio-economic conditions, and the standard of education. In the case of service providers questions covered their educational standard, any training experience in running the institution, the abscondment of the street children from these shelters, the existence of reunification programs, the evaluation of these programs and their relationships with the children’s parents. The data was collected from the following shelters, Nkandla, Nqutu, Newcastle, Eshowe, Ngwelezana, Empangeni and Richards Bay in the KwaZulu Natal Province (real names of shelters are reserved for confidentiality reasons).
The Questionnaire tool was structured into four (4) phases that is, **Phase 1:** interviews with street children between 5 and 18yrs both males and females. **Phase 2:** interviews with Service Providers. **Phase 3:** interviews with family members/households and **Phase 4:** interviews with reunified children (case studies). A snowball or accidental sampling technique was used to select the children for this study. The children were approached individually in their operational areas (on the streets). Data from all these phases was analysed and interpreted using a SPSS 14 computer style.
The process followed the qualitative method of continuous comparison as developed by Glaser & Strauss (1967) to identify themes, concepts, patterns and tendencies.

**Findings**
Findings from all 4 phases were discussed as follows:
Street children: The findings revealed that although there are also female street children (17%) but most of them are males (83%). Some started living on the street at the age of 5years (11%) and from ages between 6 – 18 years were 89%. It was found that 31% were born by religious families and had absconded from their respective homes whilst 69% belonged to no church at all. These results reflected that street life is a psychopathology irrespective whether a child is born by Christians or anti-Christ families. However, most street children (69%) belonged to no church at all.

When asked about their demographic background 73% disclosed that they were from rural areas where the infrastructure is still very poor. 29% were from semi-rural areas but peer pressure pulled them to the streets. Due to high rate of poverty 36.66% were the next-of-kin (relatives to biological parents) who worked and provided support (39.39%).

When asked why they left home, adults abuse was cited as the key reason. Even literature concurs that other street children run away from homes where there is physical, sexual and emotional abuse (Retrieved from computer Documents and Settings/smagagul/Desktop/Street Children.htm dated 2006/09/19). Street children in the sample had poor academic achievements. Most were school drop-out before their street life. The explanations provided by the children include financial problems, hunger, a desire for freedom, adult abuse and stealing. (89%) of those interviewed confessed to having repeatedly left shelters after a week or two and returned to the streets instead of going back home. Only 11% who had not left because it was their first week of arrival in the shelters.

They unanimously argued that shelters kept them occupied with house chores, playing cards, and other in-door games and no reunification programmes whatsoever. These statements justified the researcher’s hypotheses that shelters have no reunification programmes. 45.45% children preferred that parents should pay more attention to their children’s needs. 36.36% children felt that parents should get employment in order to provide physiological needs of children such as food, clothing, education and shelter. 18.18% respondents believed that parents should stop corporal punishment. Subjects who were interviewed as case studies, although they were interviewed in separate places from one another, came out with similar suggestion that the phenomenon might be eradicated if street children, families and service providers became involved in the planning and evaluation of reunification programs. With the case studies the researcher tried to adapt what is possible and more importantly what is likely to yield a better picture of why children do not reunite with their families after leaving from the shelters. Case studies help the researcher to ‘get under the skin’ of those researched and view them from the inside out (Gillman, 2000:11).

Policies
There is a belief that the success of any government can be measured by how it takes care of its youth and old people. The government introduced the grants in order to fulfil this belief. Since 1994 the South African Government (SAG) made a number of promises to improve the welfare of the vulnerable families. Firstly, it introduced Child Support Grants (CSGs) to cater for children below age 11:

Primary School Nutrition Program (PSNP): Bill of Rights as per Section 28(1)(C) of SA Constitution No. 108/1996: and the Growth Employment and Redistribution Strategy (GEAR). The laws and policies that SAG had planned appear to have failed to serve the best interest of children. For example CSG was meant to cater for children from infancy up to 11yrs excluding school-going child of 12 – 18yrs.

Even children within the accepted age, do not receive their grants because of technical delays up until the child is kicked off the computer system. Definitely that child becomes the victim of the street. The second try was PSNP which again were not offered to all primary schools. Some children in the schools whereby this program is provided prefer to leave some portion of the dished food for their elder siblings. The government promised to ensure that poor children are put first in the policy, budgets and service delivery. But
practically in this status quo some schools discriminate and expel children who cannot afford school fees. Justice centres have become the playground of juveniles who are in conflict with the law because they abandon schools and indulge themselves in criminal behaviour such as shoplifting, housebreaking and theft and robbery, to mention but a few. Some children opt to become street children while others are recruited into child labour. The government does not involve people on the ground when formulating policies and it should be recommended that members of the Legislative Assembly involve the masses before making decisions. Government is of the people not for the people.

**Service Providers**
The service providers that were interviewed were from both private and public institutions. The six (6) from private institutions stated that they do not have reunification programs (89%) and one (11%) public institution agreed to have monitoring forms which are not even evaluated because the child absconds prior to their evaluation. Service providers also mentioned that they lacked the skills necessary to deal with uncontrollable children. They further stated that they lack the training and interpersonal skills necessary to discipline the children in shelters. Minuchin as cited by Jayes (1985) referred to the difficulties encountered by a child who has several authority figures in the home, often issuing conflicting instructions. Such a set up is unhealthy for a child’s psychological well-being.

**Family Factors**
The study revealed that most children who desert their homes do so because of poverty and abuse. Most family members work in unskilled jobs and receive minimum wages. As a result most of the basic needs of children are never met. Children also do not disclose their real backgrounds to the shelters. For this reason families have no knowledge of reunification programs. This is in addition to generally not being exposed to them. As these street children become hard-core they begin to socialise with strangers, referred to as “umalume” whom they expect to play any parental roles. This umalume may not be of their culture or may have their own values and norms. The study found that the next-of-kin were often overburdened with the responsibilities of caring for their children who were not biologically theirs because of the death or desertion of the biological parents. The literature review provides evidence that the stress encountered by families in low socio-economic households is often due to overcrowding and unemployment. However families still need to remain cohessed. Cohesion plays a major role to keep the family intact.

**Conclusion**
The study found that service providers do not have reunification programs. This is a result of the lack of interpersonal skills and knowledge necessary to handle the problematic children. Since street children and their families have varied problems, no single approach can be adequate for all of them. The policies that the government enacted with respect to children seem to have failed and fuelled the street child phenomenon. Therefore programmatic efforts of prevention, containment and alleviation of street life must be adopted at all costs.

**Limitations**
- Some of the limitations that the researcher encountered were that while the number of stakeholders who run shelters were expected to be more than ten (10) but only seven (7) positively responded.
- Some services providers were also upfront with the researcher and refused to give consent to visiting their shelters or conducting interviews.
Recommendations

- It is however recommended that a standardised manual for reunification programs and Participation Action Research (PAR) Manuals be availed to shelters for uniformity.
- This programme should also be annually evaluated without singling out the children and their families.
- The effectiveness of the said manuals will be measured by means of the percentages of street children phenomenon whether it increases or decreases.

REFERENCES:


Internet
File://C:/Documents and Settings/smagagula/Desktop/Street Children.htm dated 2006/09/19

The provision of recreation facilities for the youth in Umlazi Township (A socio-spatial perspective)

Ngcobo N R 54 ngcobo@pan.uzulu.ac.za
Department of Recreation and Tourism
University of Zululand
South Africa

Abstract

The Reconstruction and Development Programme (1994) has placed emphasis on the involvement of youth in recreation related activities. This policy position has in turn indirectly compelled various South African municipalities of townships to see to it that their areas of operation are provided with recreation facilities and programmes. The general theory states that if youth are kept involved in recreation activities, then their antisocial behaviour substantially becomes controlled for the positive. It is against this background that this research inquiry was undertaken.

The fundamental aim of this paper is to establish the extent to which the youth in Umlazi Township are exposed and involved in recreation activities. It also seeks to determine the levels of recreation provision of facilities for the youth. The paper also seeks to establish the perceptions of the youth towards policies related to the provision and management of recreation facilities and activities within the study area.

The operational hypothesis upon which the study based its findings was that the Umlazi Township authorities are not adequately providing recreation facilities and activities for the benefit of the youth in the area. Further that the youth was not positively disposed towards the provision and management of recreation facilities.

It was anticipated that the findings on the study would display a positive outlook towards the initiatives of the new democratic government, associated with the Reconstruction and Development Programme. On the contrary, the findings indicated that the youth in Umlazi were negatively disposed towards the provision and management of recreation facilities and activities within the study area. It was also found that the youth thought that levels of recreation provision of facilities were inadequate. Furthermore, the study discovered that the youth are insufficiently exposed to recreation activities, and hence their minimal involvement in recreation.

Notwithstanding the emerging negative perceptions of the youth regarding their awareness, participation and authorities’ provision of recreation facilities and programmes, it remains true that the involvement of youth in recreation activities would continue to play a pivotal role in creating a nation of well-rounded individuals in the South African society.

54 N.R. Ngcobo, PhD, is a Senior Lecturer in the Department of Recreation and Tourism, University of Zululand.
1. INTRODUCTION
This paper is about the provision of recreation facilities for the youth in Umlazi township – KwaZulu-Natal · Durban. Its foundation among others is based on The Reconstruction and Development Programme (1994) and the South African White Paper on Sport and Recreation (1995 & 1998) that have placed emphasis on the involvement of youth in recreation related activities. Both the White Paper on Sport and Recreation (1995 & 1998) and the Reconstruction and Development Programme (1994) had in turn indirectly compelled various South African municipalities of townships to see to it that their areas of operation are provided with recreation facilities and relevant societal recreation programmes.

2. OBJECTIVES
The three objectives around which this revolves are:
- to establish the extent to which the youth in Umlazi Township are both exposed and involved in recreation activities;
- to determine the levels of recreation provision of facilities for the youth; and
- to establish the perceptions of the youth towards policies related to the provision and management of recreation facilities and activities within the study area.

3. HYPOTHESES
The operational hypothesis upon which the paper based its findings was that:
3.1 The inadequate provision of recreation facilities and programmes for the youth in Umlazi township has a negative impact on their behaviour.
3.2 The lack of relevant recreation programmes for the youth in Umlazi leads to the youth neglecting the existing recreation facilities.
3.3 The youth in Umlazi Township are not adequately exposed to policies related to the provision and management of recreation facilities and activities within the study area.

4. THEORETICAL FRAMEWORK
The general theory that has been postulated by different authors including Voskanyan et al (2003) Kloep and Henry (2003) Siverberg et al (2003); Kraus (2001); Torkildsen (2001); Edginton et al (1995); Marsland (1987); Rodgers (1985); Smith and Theberge (1987); Weiskopf (1982); to mention only a few states that if youth are kept involved in recreation activities, then their antisocial behaviour will be substantially controlled for the positive. It is against this background that this research inquiry was undertaken.

5. DEFINITION OF TERMS
In this paper recreation, recreation provision, recreation demand, leisure, and youth are the only that are going to be defined. The reason for defining these terms was that of casting away some doubts in as far as their interpretation and usage.

5.1 Recreation
Recreation is an activity or experience carried within leisure, usually chosen by the participant, either because of satisfaction, pleasure or creative enrichment derived, or because he or she perceives certain personal or social values to be gained from them, (Edginton et al (1995); Torkildsen (2001); Magi (1988) and Bucher (1983).

5.2 Recreation Provision
According to Nash (1928) and Torkildsen (2001) provision refers to the supply of something. In the case of recreation provision the two authors suggested the following guidelines:
(a) A safe place of sufficient size in which to play: (space)
(b) The organisation of the in-school and the out-school time: (leisure)
(c) Skilled leadership: (Recreation manager) and
(d) A well selected programme of activities: (Recreation programme)
5.3 Recreation Demand
The concept recreation demand refers to the conscious or unconscious need or a desire by an individual for participation in recreation activities (Monkhouse et al: 1965). Such recreation demand could furthermore be categorised as follows:

(a) **Effective demand / manifest demand** (Burton et al in Appleton) which is reflected in the active participation in recreation activities (SCOR: 1979)

(b) **Deferred recreation demand** involves a need to participate in recreation activities that is not satisfied because those who could and would participate lack the means and knowledge or both, (SCOR: 1979)

(c) **Latent recreation demand** involves recreation needs of potential users who cannot at present participate in recreation activities and require an improvement in their social and economic circumstances to do so, (SCOR: 1979)

5.4 Leisure
According to Murphy (1981), the concept of leisure has been categorised into time, function, spatial· environment and an integrative aspect synthesising perspective, holism. What is striking in Murphy’s (1981) categorisation of leisure is that, leisure is not defined as an activity but rather includes time, and attitudes toward time and non-work activities. From Murphy’s point of view, the researcher deduces that leisure is free time related, that is, time at the disposal of the individual, during which the individual can spend it as he or she chooses.

5.5 The Youth
The definition of youth by the Readers Digest Universal Dictionary almost shares the same idea with that propounded by Simpson et al. (1989), where it defines youth·age as the time when one is young, the early part or period of life, more specifically, the period from puberty till the attainment of full growth, that is, between childhood and adult age

Rogers, (1985), in her classification of adolescent provided the following categorisation of an adolescent:

- 12 - 15 years: early adolescent
- 15 - 18 years: middle adolescent
- 18 - 22 years: late adolescent

In this study, the term youth, juvenile, and adolescent is used interchangeably. Throughout this study these terms will refer to any unmarried people who falls between the ages of 12 and 22. It is believed by the researcher that this is the most active group of any population. The researcher thinks that it is the role played by the above age groups to recreation, which drove Burton (1968), to say that many sports are largely the province of young persons between the ages of 12 and 25 years.

Since the term youth employs different connotations to various spheres of life, for the purposes of this study, youth refers to unmarried people who are between the ages of 12 and 22. This age group is preferred among others, because it is within this age group where many authors write about early, middle, and late adolescent. Furthermore, this is one age category that seems to be active and forms the large percentage of Umlazi inhabitants.

6. RESEARCH FRAMEWORKS AND DATA MANAGEMENT
As this research was examining the provision of recreation facilities for the youth in Umlazi and the youth’s perception towards the policies related to the provision and management of recreation facilities and activities within the study area, the collection of data was therefore limited to the youth.
6.1 DATA COLLECTION

In this research there are four data collection strategies or methods that have been employed. These strategies are questionnaires, interviews, observations and available data. The four strategies have been preferred among others because of the nature of the research problem and the kind of information desired by the researcher. Let us now look at each of the strategies employed by this study.

6.1.1 Questionnaires

Questionnaires were distributed among the youth, as the main population under study. Owing to the fact that some of the population sample are in lower grades to understand the language used in the questionnaire, and that some are likely to confront problems in understanding recreation terms used in the questionnaire, the researcher has decided using both English and isiZulu in the questionnaire.

But, before the main questionnaire had to be distributed to the main sample, that is, the youth, a pilot study, or according to Philliber et al. (1981:117) a pre-test was conducted for the following purposes:

(i) To test the validity and reliability of the questions;
(ii) To discover and ameliorate mechanical problems associated with interviews, questionnaires, and the like;
(iii) To develop better approaches to target populations if needs be;
(iv) To develop meaningful methods of categorising data to be collected; and
(v) To determine whether or not a more substantial investigation of the same phenomena is warranted.

There were about 20 questionnaires that were distributed as a pilot study. After conducting the pilot study, it was noticed that some changes in the questionnaires had to be effected. The changes were about some of the recreation activities that were not included in the questionnaire. These changes effected subsequently included in the main questionnaire.

The main questionnaire has been the amended version of the pilot study questionnaire. The amended areas have been in the section of personal interest.

It must be stated at this stage that the use of pilot study by the researcher played a significant role in minimising the unforeseen errors that would have occurred in the design of the main and final questionnaire. Consequently, the final design of the main questionnaire has saved the researcher the prevalence of uncalled for mistakes.

In addition, the researcher has also constructed two sets of questionnaires that were specifically designed for the interview of the respondents who are serving the authority in the township. These respondents included both the Mayoress of the Durban South Central region and the Wards Councillors. The formats of these questionnaires have been more or less the same as that of the youth. The only exceptions are in the section in which information about the provision of recreation facilities found in the different wards/sections of Umlazi, as well as, the providers of recreation facilities within the wards, is solicited. (Appendix A2 and A3).
6.1.2 The Interview

One other tool that has been used by the researcher in soliciting the information about the provision of recreation facilities and programmes for the youth in Umlazi has been to arrange a face-to-face conversational exchange with the youth. The interview with some members of the youth has been specifically based on the question of recreation programmes that are available in Umlazi. The main reason for conducting interview on this question has been a suspicion by the researcher that respondents might not be in a position to understand the term recreation programmes even though there is a Zulu version in the questionnaire.

Other interviews that have been conducted are, with people serving in authority. The information received from the authorities empowered the researcher in as far as the provision of recreation facilities and the involvement of youth in recreation facilities; in addition, they stressed the importance of establishing youth organisations/ clubs in each and every ward or sections found in Umlazi.

6.1.3 Observation

Another method used in this study to collect data is observation. This technique helped in as far the location and provision of recreation facilities within the wards/ sections and within Umlazi township as a whole. Here, as a researcher one had to use a non-participant observation procedure.

In addition, this technique helped in observing the subjects, (youth), in their natural setting. By using the non-participant observation procedure, the researcher had an opportunity of getting an idea of what the youth normally do during their leisure time. The sections in the township visited for the application of this procedure were Sections AA, BB, L, Z, V and D. The researcher visited these sections five times at an interval of one week. It must be mentioned at this stage that some of the visits to these sections coincided with school holidays where most of the subjects under study had abundant leisure time at their exposure.

7. THE RESEARCH SAMPLE

The research sample of the study was 226. This figure was arrived at by the researcher after making use of Magi’s (1998: 180) Table of Estimation of Sample Size from a Given Population, where he suggested that the sample need to within ± 0.05 of the population proportion, P, with a 95% level of confidence. In this study therefore the population at the time when the study was conducted was 96 449.

<table>
<thead>
<tr>
<th>AGE</th>
<th>SAMPLE</th>
<th>TOTAL POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 to 14</td>
<td>36</td>
<td>29 943</td>
</tr>
<tr>
<td>15 to 19</td>
<td>123</td>
<td>30 832</td>
</tr>
<tr>
<td>20 to 24</td>
<td>67</td>
<td>35 679</td>
</tr>
<tr>
<td>Total</td>
<td>226</td>
<td>96 449</td>
</tr>
</tbody>
</table>

TABLE 1: UMLAZI TOWNSHIP YOUTH POPULATION
For purposes of eliminating the question of exclusivity when it comes to the research sample, the main areas targeted for removing the exclusivity were sex, level of education and language. Consequently the study attempted to make the research sample as inclusive as possible when it comes to the afore mentioned areas by doing the following:
(a) The inclusion of both sexes as respondents at the ratio of 50 males and 50 females (0.5:0.5). In the total of 226 as the research sample 113 questionnaires have been distributed to male respondents; while the other half to females respondents;
(b) The removal of bias pertaining to the level of education the respondents attained. The questionnaires were, therefore, available to every youth that has been within the sample size; and
(c) The removal of language barrier, by providing in the questionnaire both English and Zulu as the main languages that are used in the study area.

Consequently the areas of exclusivity when it comes to the question of education, sex and language were removed. This made it possible for almost all youth in the research sample to respond to the questionnaire without any fear which might have been posed by sex, level of education and language. It was therefore easier for the researcher to make a random selection from all the categories of youth. These include youth out of school and those who are still in school; youth from all the adolescent stages; and youth who might have a language problem.

8 DATA PRESENTATION ANALYSIS AND FINDINGS
The analysis of data was done using the SPSS programme.

8.1 Personal Background
In this section the respondents were required to give information on their socio-demographic background. The variables that were considered include gender, education and home location within Umlazi of the respondents. The broad outcomes of the collected and analysed data is depicted in Table 5.1 below

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>SUB-VARIABLE</th>
<th>ABSOLUTE FREQUENCY</th>
<th>RELATIVE FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>113</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>113</td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>226</td>
<td>100%</td>
</tr>
<tr>
<td>Age</td>
<td>12 to 14 years</td>
<td>036</td>
<td>16%</td>
</tr>
<tr>
<td></td>
<td>15 to 17 years</td>
<td>123</td>
<td>54%</td>
</tr>
<tr>
<td></td>
<td>18 to 22 years</td>
<td>067</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>226</td>
<td>100%</td>
</tr>
<tr>
<td>Education Level</td>
<td>Less than grade 7</td>
<td>011</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>Grade 7 to 9</td>
<td>066</td>
<td>29%</td>
</tr>
<tr>
<td></td>
<td>Grade 10 to 12</td>
<td>143</td>
<td>63%</td>
</tr>
<tr>
<td></td>
<td>Tertiary Institution</td>
<td>06</td>
<td>03%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>226</td>
<td>100%</td>
</tr>
<tr>
<td>Structure of home</td>
<td>Four roomed</td>
<td>106</td>
<td>47%</td>
</tr>
<tr>
<td></td>
<td>Own built planned</td>
<td>090</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Own built unplanned</td>
<td>030</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>226</td>
<td>100%</td>
</tr>
</tbody>
</table>
In addition to the socio-demographic characteristics, respondents were also requested to indicate within the townships the sections in which they are living. The mean indicated that approximately 8 respondents represented each section. The computation of the mean in this research is important in the following sense: To determine the approximate number of respondents per each section who have participated in the research.

8.2 Family Economic Status and Recreation Participation

Information about the socio-economic status of the respondents in as far as car ownership of their families showed that 42 percent as against 58 percent families own cars.
The provision of recreation facilities for the youth in Umlazi township (A socio-spatial perspective)

The information about private transport ownership is deemed necessary by the research, in order to determine whether there is a relationship between private transport ownership and choice of recreation activities by the respondents’ families.

An interesting feature noted during the investigation was that 79.6 percent of the families who own cars do not use them for going to recreation facilities. Instead, they prefer to use public transport. The dependency by the youth’s families on public transport in accessing recreation facilities they use to pursue their recreation activities is likely to suggest that car ownership have less bearing on their choice of recreation activities. The research in bringing to the fore the economic status of the youth’s families, as well as, their participation in recreation activities, is aiming to see whether is there any influence that the families choice of recreation has on the youth’s participation of recreation activities.

8.3 The Youth’s Recreation Interest
In this section data on the youth’s recreation participation and demand is both exposed and analysed. Youth’s recreation participation and demand is the most important section of this research.

The areas in the exposition and analysis of data for this section that are closely looked into include:
(a) Availability of time to engage in recreation activities;
(b) Types of recreation activities the respondents are involved;
(c) Exposure to recreation activities;
(d) Provision, location and accessibility of recreation facilities; and
(e) Demand of present and future recreation facilities.

8.3.1 Availability of Time to Engage in Recreation Activities
Respondents were asked to indicate whether they do have leisure time to engage in recreation activities.

**TABLE: 3 PERCEIVED AVAILABILITY OF LEISURE TIME**

<table>
<thead>
<tr>
<th>RESPONSE</th>
<th>YOUTH</th>
<th>MALES</th>
<th>FEMALES</th>
<th>12-14 YRS.</th>
<th>15-17 YRS.</th>
<th>18-22 YRS.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>YES</td>
<td>193</td>
<td>85</td>
<td>98</td>
<td>87</td>
<td>95</td>
<td>84</td>
</tr>
<tr>
<td>NO</td>
<td>33</td>
<td>15</td>
<td>15</td>
<td>13</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL</td>
<td>226</td>
<td>100</td>
<td>113</td>
<td>100</td>
<td>113</td>
<td>100</td>
</tr>
</tbody>
</table>

Furthermore, the respondents had to indicate the amount of leisure time available to them during weekdays and weekends. Figure 5.3 below indicates that the majority of the youth have less than 2 hours leisure time during weekdays, while during weekends this time is 2 to 4 hours. An obvious reason for this state of affairs is that weekdays the youth put aside some of their free time for school related activities, for example, studying. most of them are scholars. Consequently, the youth happen to have more time at their exposure during weekends when schools are not in operation. During weekdays the youth put aside some of their free time for school related activities, for example, studying.

8.3.2 Type of Recreation Activities Pursued

The respondents were further required to indicate the types of recreation activities in which they are participating. The global picture of recreation activities in which the respondents participate is depicted by figure 5.4. in the next page.
FIGURE 4: PARTICIPATION IN RECREATION ACTIVITIES
(AGE GROUP)

FIGURE 5: PARTICIPATION IN RECREATION ACTIVITIES:
(GENDER)

The above figure indicates that the number of males who participate in vigorous physical involving recreation activities is higher than among females. These recreation activities appear to be soccer, karate, cricket, rugby and boxing. On the other extreme females in Figure 4 appear to dominate males in recreation activities that are fundamentally encouraging socialisation. These recreation activities are singing, dancing and park visiting. The number of females who patronises the afore mentioned recreation activities ranges between 20 percent and 43 percent.

From Figure 5 above it is noticed that the recreation activities that appeal to the age group 15 to 17 and 18 to 22 are more or less the same. These recreation activities are soccer, television watching, reading, singing, park visiting, dancing and basketball. The afore mentioned recreation activities account for 10 to 45 percent in terms of patronage from these age groups. Soccer in the age groups 15 to 17 and 18 to 22 years appears to be topping the list. The only recreation activity that appears to be receiving attention to one age with the exclusion of the other is chess playing. Chess playing enjoys of 12% from the age group 18 to 22 years, while in the age group 15 to 17 the patronage is far below 10 percent. Soccer in age group 15 to 17 is the sport that seems to be more popular and as a result this age group leads the other age groups when it comes to soccer patronage.

From Figure 5 it also appears the age group 12 to 14 years is the most involved group in recreation activities. Although in this age group not a single recreation activity appear to be patronised by more than 40 percent, the age group appears to engaged in multi-faceted recreation activities. The recreation activities that appear to be popular by scoring attracting 10 percent and more participants from the respondents of this age group are tennis, athletics, karate, netball, singing, reading, television watching and soccer. While soccer in the age groups 15 to 17 and 18 to 22 years is topping the list, it appears that the popular recreation activity in the age group 12 to 14 years is television watching. Television watching accounts for 36 percent patronage from this age group.
8.3.3 Exposure to Recreation Activities
Another information deemed necessary for inclusion in the study was to identify the sources that have generated participation among youth in recreation activities.

Figure 6 gives a clearer illustration of the role that each source is playing in exposing youth to different types of recreation activities. From figure 6 it appears that television, friends and family are leading sources in generating recreation participation among the youth. These three sources alone contribute about 77 percent as against the 23 percent that is contributed by the rest. The role that the other sources are play is very minimal.

8.3.4 Provision, Location and Accessibility of Facilities
Up to now this paper has exposed you to the data relating to the youth’s recreation participation and sources that have generated their participation. The following paragraph will take a closer look on the location of facilities that the youth are using in pursuing the above recreation activities as depicted by table 5.3 below.

The data on the location of recreation facilities used by the youth in pursuing recreation activities is important in the sense that one is in a position to see whether their location is accessible to the youth or not. What percentage of patronage do the recreation facilities located within Umlazi enjoy as against those that are located outside Umlazi? What is the youth attitude towards the location of recreation facilities?
TABLE 4: LOCATION OF RECREATION FACILITIES USED BY RESPONDENTS

<table>
<thead>
<tr>
<th>LOCATION OF FACILITIES</th>
<th>ABSOLUTE FREQUENCIES</th>
<th>FREQUENCY PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within Umlazi</td>
<td>99</td>
<td>44%</td>
</tr>
<tr>
<td>Outside Umlazi</td>
<td>64</td>
<td>28%</td>
</tr>
<tr>
<td>Schools found in Umlazi</td>
<td>51</td>
<td>23%</td>
</tr>
<tr>
<td>Schools found outside Umlazi</td>
<td>12</td>
<td>05%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>226</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

From table 3 it is found that 67% of the limited recreation facilities that are used by the youth are located within Umlazi. These recreation facilities are basically soccer fields, community halls, swimming pools and tennis courts. Community halls are basically used for indoor recreation activities like choral and dancing practices.

The youth were requested to assess the conditions of the facilities found within the township using the semantic differential scale. From TABLE 5 below, it appears that 95.14% of the respondents indicated that the conditions of recreation facilities that are used by the youth in Umlazi are poor. Only 4.86% of the respondents rate the recreation facilities as being good or meeting the expected standards.

<table>
<thead>
<tr>
<th>Recreation Facilities conditions</th>
<th>Absolute Frequency</th>
<th>Responses (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Poor</td>
<td>121</td>
<td>53.54%</td>
</tr>
<tr>
<td>Poor</td>
<td>77</td>
<td>33.63%</td>
</tr>
<tr>
<td>Fair</td>
<td>18</td>
<td>07.97%</td>
</tr>
<tr>
<td>Good</td>
<td>09</td>
<td>04.42%</td>
</tr>
<tr>
<td>Very Good</td>
<td>01</td>
<td>00.44%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>226</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The respondents were further requested to indicate the place where they would like recreation facilities to be located in Umlazi. The preferred areas were as follows:
Having looked to the question of location and the time travelled to recreation facilities, the research thereafter turns on to look into the question of the accessibility of recreation facilities. 74% of the respondents have shown a feeling that the recreation facilities in Umlazi are not easily accessible. In addition to the inaccessibility of facilities, 95% of the respondents have expressed a feeling in the research that recreation facilities in Umlazi are insufficient.
The respondents were further asked about the types of recreation facilities to be provided in Umlazi, the responses were as per figure 8 above. below.

Closely related to Figure 8 above the respondents were further requested to indicate any four recreation facilities that they think need to be urgently provided in Umlazi. Their responses are categorised in terms of gender and age groups in Table 5.4. The rationale behind this categorisation in the research is to find out whether is there any difference in terms of recreation demand from the different age groups and members of different sex.
TABLE 6: PREFERRED RECREATION FACILITIES BY GENDER AND AGE [%].

<table>
<thead>
<tr>
<th>FACILITIES</th>
<th>MALES</th>
<th>FEMALES</th>
<th>12 – 14YRS.</th>
<th>15 – 17 YRS.</th>
<th>18 – 22YRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basketball</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cinemas</td>
<td>62</td>
<td>63</td>
<td>56</td>
<td>66</td>
<td>60</td>
</tr>
<tr>
<td>Soccer Fields</td>
<td>62</td>
<td></td>
<td>33</td>
<td>54</td>
<td>40</td>
</tr>
<tr>
<td>Swim. Pools</td>
<td>40</td>
<td></td>
<td>57</td>
<td>67</td>
<td>46</td>
</tr>
<tr>
<td>Dancing Halls</td>
<td></td>
<td>43</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music. Theatres</td>
<td></td>
<td>42</td>
<td></td>
<td>35</td>
<td>46</td>
</tr>
<tr>
<td>Hotels</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Recreation facilities that are more or less common to all categories of youth.

An interesting thing in TABLE 6 above is that the provision of cinemas, soccer fields and swimming pools are regarded by the three age groups as the most preferable recreation facilities. The reason for such a state of affairs is dealt with in this research in the interpretation section.


In this section the paper looks at what are the respondents opinions in as far as the under-utilisation of leisure time by the youth, as well as, the provision of recreation facilities in Umlazi. In order to elicit the views of the respondents about the under-utilisation of leisure time by the youth, as well as, the provision of recreation facilities in Umlazi, the researcher has made use of semantic differential scales types of question.

The first question to be treated in this section is question 30. Question 30 required the respondents to give their opinions in as far as the adequacy of recreation facilities in Umlazi. This question in the study was included to serve two purposes. On one hand it was intending to get the attitudes of the respondents towards the existing recreation facilities in Umlazi, while on the other extreme it was used as a direct test of one of the hypotheses of this study. In this question about 92.4% of the respondents indicated that in Umlazi there is lack of recreation facilities. It is only 7.6% who held the view that Umlazi is provided with sufficient recreation facilities. A response of this nature was common even taking age and gender into consideration.

Other questions that were intended to solicit the attitude of the youth were questions 27, 28 and 29. These questions were more or less related to each other in a way. The fundamentals of their relationship were in the sense that, the respondents were requested to put forward their opinions, in as far as the youth under-utilisation of leisure time, and their probable involvement in: delinquent behaviour (Q27); usage of drugs (Q28); and involvement in criminal behaviour (Q29). The respondents were made to use the following scale items:

<table>
<thead>
<tr>
<th>Fully Agree (FA)</th>
<th>Agree (A)</th>
<th>Disagree (D)</th>
<th>Fully Disagree (FD)</th>
</tr>
</thead>
</table>

The responses gathered for these questions are clearly summarized in figure 5.9 below. From figure 5.9 the researcher deduces that the majority of the respondents are fully agreeable to the youth under-utilization of leisure time and consequential anti-social behaviour. Only less than 20% of the respondents hold a different view. Those who are holding a different view altogether seem not to relate the youth under-utilization of leisure time to anti-social behaviour.
FIGURE 9: PERCEIVED ANTI-SOCIAL BEHAVIOURS AND THE UNDER-UTILIZATION OF LEISURE TIME

10. SUMMARY CONCLUSIONS AND RECOMMENDATIONS

The operational hypotheses throughout the paper were as follows:
(a) The inadequate provision of recreation facilities and programmes for the youth in Umlazi township has a negative impact on their behaviour. And that
(b) The lack of relevant recreation programmes for the youth in Umlazi leads to the youth neglecting the existing recreation facilities.

The direct question that was put to the youth about the inadequacy of facilities and programmes coupled with antisocial behaviour among the youth revealed that 86% of the youth believe this to be true. This has been affirmed by the fact that about 92.4% of the youth has agreed that there is lack of recreation and sporting facilities in the township.

On the second hypothesis an indication has been that only a minimal of facilities that are accompanied by relevant recreation programmes. These facilities are soccer fields and community halls. Consequently, recreation activities that are offered in these facilities have a high number of participants, for example soccer, choral music and dancing. On the other hand facilities that have not been accompanied by relevant recreation programmes have failed to attract a large number of participants from the youth community. The two hypotheses propounded at the beginning of the study has therefore been proven to be valid.

From what has been gathered throughout the research, the researcher recommends that:
(i) In providing recreation facilities for the youth in Umlazi, providers must take into consideration gender and the different adolescent stages as these call for different recreation needs.
(ii) It is further recommended that the provision of recreation facilities must be accompanied by relevant recreation programmes to ensure their optimal usage. These programmes must be conducted by professional people in the field: and

(iii) Thirdly, the study recommends that the location of facilities must not be measured in terms of centrality but accessibility by whatever means of transport

In concluding the findings of this paper, it will be proper to revisit what Harris in van der Smissen et al. (1975:126) said about the provision of recreation facilities for both boys and girls. She had this to say:

“Leaders will have to understand the difference in boys and girls in terms of growth and development. In addition they will have to appreciate the great individual variation within a sex and understand how interest and involvements are pursued because of how they have been reared and reinforced for the individual. Once one knows and understands that there is probably greater variation between the 97th percentile and the 3rd percentile of the male than there is between males and females in general, one must program for wider interest and involvement for both sexes. This understanding leaves no rationale for perpetuating double standards for expectations or two types of programmes within recreation. Once you know better, it is unforgivable if you continue to perpetuate your own biases and insecurities upon those to whom you give leadership and assistance in the development of their selfhood.”

BIBLIOGRAPHY


Putterill, M., Bloch, C., (1978): *Providing for leisure for the city dweller*. Cape Town, David Philip, Publisher (Pty) LTD.


Systems Thinking and Learning Organization Framework: The Strategic Logic of Sustainable Competitiveness in Organizations

Nhlabathi SS

bnhlab@pan.uzulu.ac.za
Department of Development Studies and Anthropology
University of Zululand
South Africa

Abstract
This paper explores strategies for building sustainable and competitive organizations. This paper suggests that unless organizations keep pace with competition they easily fall into oblivion. The paper suggests systems thinking and learning organization approach as framework for sustainable competitiveness. The paper also argues that even though there is very little to suggest that the concept of systems thinking has been adopted as a framework in organizational management practice, but scholars of management have been influenced by this concept even more than most people are aware of.

Key words: sustainable competitiveness; conventional organizational development approaches; system; systems thinking; learning organization.

1. Introduction

Today all organizations, both public and private sector organizations operate in competitive business environments. That increases the level and diversity of requirements for quality of their products imposed upon them by their stakeholders. Fulfilling certain minimum requirements is not enough, neither operating at the average level of performance, because in those cases there are better organizations that win the competition. Successful and competitive organizations strive for something more. That is expressed in the modern quality approaches by aiming at performance excellence which translates into sustained high growth in both revenues and profits.

Organizations have sustainable competitiveness when they consistently produce products and/or deliver systems with attributes which correspond to the buying criteria for the majority of the customers in their targeted market. Sustainable competitiveness is enjoyed by those organizations who are appealing to current, or emergent, majority of customers in their target market (Hall, 1993: 610). In order to have sustainable competitiveness, Coyne (1986: 57) suggests that not only do product and/or delivery system attributes need to be significant to customers, but to be sustainable they also need to be the result of a capability differential which will endure.

In view of this, this paper explores strategies and processes for turning organizations into sustainable and competitive systems. This paper argues that organizations will attain competitive sustainability only by adopting Systems thinking and learning organization approach. The reason why Systems thinking and learning organization approach is

55 SS Nhlabathi is a Lecturer and acting Head of the Department of Development Studies and Anthropology, University of Zululand, South Africa
promoted arises from the fact that conventional approaches to organizational development which have coloured how people look at the world have not been able to provide long-term and longer lasting solutions to present day organizational problems. Because of this there is a need to think differently about problems that organizations face. Systems thinking approach provides a different perspective to understanding world problems. This concept helps people see patterns in the world and identify specific leverage points that can be used to produce lasting, beneficial changes within systems (Haines et al., 2005: 40-46). The paper explores this concept and argues that this concept needs to be used deliberately as a framework in organizational development practice.

This paper also argues that even though the concept of systems thinking has not been used widely as a framework in management practice but scholars of management have been influenced by this concept even more than most people are aware of.

This paper opens by reviewing models of conventional approaches to organizational management. The paper shows that conventional approaches to management have not brought about sustainable competitiveness in organizations and by implication can not be relied upon to turn organizations into world class systems. Since conventional approaches to management offer limited solutions this paper turns to systems thinking and learning organization framework, as an approach for sustainable organizational change. The paper further shows the influence of systems thinking approach into management and leadership theory.

2. Conventional Approaches to Organizational Development

As it was suggested above leaders of organizations are concerned about growing and sustaining the organizations that they lead. The question is how can sustained growth be achieved? Sustained organizational growth has proven to be elusive. Kim and Mauborgne (1997) point out that after decades of downsizing and increasingly intense competition, profitable growth is still a tremendous challenge in many companies. Studies (Strebel, 1996; Beer, et al., 1990; Garvin, 1993; Bridges and Mitchell, 2000; and Senge et al., 1999b) also show that most organizations have not been successful both in their turnaround strategies and in their general change efforts.

Anecdotal evidence, decades of experience in the change field, smaller research studies, numerous conversations with other prominent consultants and writers suggest that approximately 75 percent of all major change initiatives fail to fully meet their initial objectives (Haines, et al., 2005: 20). Holbeche (2005: 6) reports that 75 percent of all transformation efforts fail, and re-engineering efforts fail are between 50 and 75 percent. This view is also supported by Wheatley (1997). Kotter (1995: 59) writes that a few corporate change efforts that have gone under many banners: total quality management, reengineering, right sizing, restructuring, cultural change, and turnaround have been successful. Many have been utter failures. Kotter (1998) further elaborates on this point that according to most assessments fewer than fifteen of the hundred or more companies he has studied have successfully transformed themselves.

Studies further suggest reasons why change management strategies fail. Pascale, et al (1997: 127) attribute change programme failures to the fact that the whole burden of change tends to rests on a few people. They state that the number of people at every level who make committed and imaginative contributions to organizational success is simply too small. Bridges and Mitchell (2000) suggest that change management programmes fail because they tend to neglect the dynamics of personal and organizational transition that can determine the outcome of any change effort. Strebel (1996:86) points out that change fails because
managers and employees view change differently. Few leaders recognize the ways in which individuals commit to change to bring it about. For many employees, including middle managers change is neither sought after nor welcomed. It is disruptive and intrusive. It upsets the balance.

Beer, et al (1990) add another dimension to lack of success in organizational change efforts by stating that revitalization fails because the idea often comes about through companywide change programmes sponsored by corporate staff. Beer et al call this “the fallacy of programmatic change”. Senge (1999) points out that most organizational change effort fails because they are based on a premise of a definitive formula rather than an ongoing process. Some popular change strategies such as downsizing, re-engineering, and “slash and burn” retrenchments often fail to sustain themselves. Hartman (2004: 12) is also critical of slash-and-burn strategy pointing out that it is far too limited. He points out that slash-and-burn offers quick-fix solutions. On the slash-and-burn strategy, Holbeche (2005: 10) quotes Hammer (2001) who states that business re-engineering during the 1990s went too far, in some cases cutting into not just the “fat” of the organization but also its bones and sinews. This resulted in what is called corporate “anorexia” which made organizations become too lean to be able to respond flexibly and innovatively in an increasingly competitive global market place.

In a study done by Nhabathi (2006) on strategies to build sustainable competitive organizations, it was found that organizations fail to meet their potential for the following reasons: lack of commitment by staff to the organization and to the change process; inability of an organization to respond to its environment; putting one’s interest ahead of that of on organizations; ideological orientation of some staff which is at variance with the vision of the organization; the tendency to blame the next person for problems in an organization; lack of clearly defined common vision; hostilities amongst staff; and, an all powerful management, the “hero” CEO.

The above exposition and the results of the study done by Nhabathi (2006) show that for one to bring about superior results in an organization one needs to go beyond conventional approaches of organizational development. There is therefore a need for a paradigm shift in leadership from traditional approaches to systems thinking approach to problem solving (Haines et al, 2005: 40-46).


The Industrial Revolution came with great changes in the way production was done. Managing the new forms of production created a need for some new methods for dealing with the management issues. One theory of management that had far reaching effect in the field of management is scientific management developed by Frederic Winslow Taylor (1856-1915). Taylor was one of the first to attempt to systematically analyze human behaviour at work (Wertheim, 1999). Through the principles of scientific management Frederick Taylor wanted to show that fundamental principles of scientific management are applicable to all kinds of human activities. Scientific management was employed to provide a logical, systematic and thorough analysis of shop-level problems. Efforts towards increased efficiency which would result in both increased profits and higher wages fostered the development of specific procedures within individual companies (Jackson, 2000: 199).

The ideas of Frederick Taylor later to be called Taylorism led to concepts of viewing organizations as smoothly running machines. Taylorism had profound results as it led to dramatic improvement in productivity (Wertheim, 1999). New departments arose such as
industrial engineering, personnel, and quality control. Rational rules replaced trial and error; management became formalized and efficiency increased. Wertheim (1999) and Robbins and Decenzo (2001: 29) present the principles of Taylorism. Taylorism did not go without criticisms. Simple models of maximizing behaviour were not enough to analyze business organizations critics stated. The relatively mechanical models apparent in the scientific management era gave way to theories represented by the human relations movement. Human relationists shifted some of the focus away from the man-machine system per se to motivation and interrelationships amongst individuals in the organization (Johnson, et al, 1973: 12). Human relationists helped in showing that an organization is more than a formal arrangement of functions but is also a social system.

Scientific management, Fayol’s administrative management theorists, micro-economics, and Weber’s bureaucracy theory or public administration constitute what is commonly called traditional organizational theory. Traditional theory focuses on separating the individual pieces of what is being studied. It is based on principles of reductionism. The theory of reductionism has been found to be inadequate in addressing problems of human kind. Weaknesses of traditional approaches caused a paradigm shift into systems thinking becoming a dominant theory in management and in organizations (Jackson, 2000: 62).

In order to lead organizations it is essential that paradigms of the past be changed. The paradigm or worldview of regarding organizations in mechanistic terms, as collections of replaceable parts capable of being reengineered and expecting them to perform to specifications with machine-like obedience is flawed. Paradigms of the past have tended to view people as passive, unemotional, fragmented, incapable of self-motivation and uninterested in meaningful questions of good work. Successful organizational management programmes start with the assumption that people, like all life, are creative and good at change, these organizations have adopted systems approach paradigm (Wheatley, 1997 and 2001).

Systems thinking has thus been accepted as a new framework in management and in organizations. The concept of systems thinking cannot be understood outside the concept of a system, so it would be logical to define the concept of a system before defining system thinking.

Ackoff (1997: 3-4) characterizes systems as being marked by all the parts working together in order to carry out the purpose of the systems optimally; secondly, all the parts must be arranged in a specific way in order to carry out the purpose; thirdly, all systems have a specific purpose within larger systems; fourthly, systems maintain their stability through fluctuations and adjustments, and finally, systems have feedback.

From the work of Ackoff it is clear that the concept of a system implies a unit which acts in unison, has a clearly defined purpose, adjusts to the environment, and is not divorced from its environment of which it is part. Used as a framework for organizational leadership the concept suggests that unless organizations comply with the above principles they are unlikely to attain competitive leadership.

Progressing from the concept of a system to systems thinking, Ackoff (1997: 16) defines systems thinking by offering its benefits. He points out that systems thinking is a language that offers a way to communicate about dynamic complexities and interdependencies. Many problems that face people in organizations are caused by a web of interconnected, circular relationships. Systems thinking allows people to better understand such problems and by implication systems thinking would empower leaders of organizations to be better leaders.

4. **The concept of a Learning Organization and Sustainable Change**

Senge (1990) promoted and popularized the concept of the learning organization but de Geus (1988) made his earlier contribution. Other important contributions on the concept of the learning organization were done by Argyris (1991); Garvin (1993); Argyris (1994); Senge (1994); Jack Welch in Kramer (2002).

On the performance of an organization for competitiveness de Geus (1988: 70) points out that an organization cannot attain sustainable improved results unless it is linked to it being a learning organization or what he calls institutional learning. Institutional learning is defined as the process whereby management teams change their shared mental models of their company, their markets, and their competitors. Institutional learning begins with the calibration of existing mental models. High level, effective, and continuous institutional learning and ensuing corporate change are prerequisites for corporate success. Successful organizations recognize and react to environmental change before the pain of a crisis. The only competitive advantage the company of the future will have is its manager's ability to learn faster than their competitors this can only be done if a company becomes a learning organization.

Senge (1990:6) sees systems thinking as one of the disciplines of a learning organization. He understands a learning organization as an organization where people continually expand their capacity to create the results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning to see the whole together. It is important to stress that in a learning organization people learn together. What distinguishes learning organizations from traditional organizations is the mastery of five “learning disciplines” or “component technologies”: namely, personal mastery, mental models, shared vision, team learning and systems thinking. These five learning disciplines are necessary to create a learning organization and organizations become successful only by becoming learning organizations.

Senge (1990: 6-10) and Senge *et al* (1999b:32) explain what each of the five “learning disciplines” entails. Personal mastery is a discipline of aspiration. It involves clarifying and deepening personal vision, of focusing energies, of developing patience, and of seeing reality objectively. Learning to cultivate the tension between personal vision and reality can expand people’s capacity to make better choices, and to achieve more of the results that they have chosen. In a learning organization people are vision driven, they are committed to lifelong learning.

Mental models are deeply ingrained assumptions, generalizations, or pictures or images that influence how people understand the world and how they act. Mental models influence the way people behave. The discipline of mental models is a discipline of reflection and inquiry. It is focused around developing awareness of the attitudes and perceptions that influence thought and interaction. Through the “ladder of inference”, which is a discipline of mental models researchers/inquirers are made aware that people in general behave and that they have a tendency of jumping to counterproductive conclusions and assumptions. This suggests that leadership in a learning organization needs to be aware how mental models that people have would influence the way people behave and thus the whole performance of
an organization. The study by Nhlabathi (2006) shows how mental models influence people's actions.

The discipline of shared vision involves a collective focusing on mutual purpose. People become committed to a group or organization if they are guided by shared images of the future they seek to create and have principles and guiding practices by which they hope to get there. The practice of shared vision involves the skills of uncovering a shared picture of the future that fosters genuine commitment and enrollment rather than compliance. In mastering the discipline of mental models leaders learn the counter-productiveness of trying to dictate vision, no matter how heartfelt that vision may be. In a learning organization leaders do not dictate the vision but the vision develops organically.

Team learning is a discipline of group interaction. It starts with what Senge calls a dialogue where team members suspend assumptions and enter into a genuine thinking together. Through team learning teams transform their collective thinking and learn to mobilize their energies and actions to achieve common goals. Teams learn to understand that the whole is more than the sum of individual members' talents. In modern organizations teams and not individuals are the fundamental learning units. Unless teams can learn the organization cannot learn.

The last and the most important learning discipline as identified by Senge is Systems thinking. Systems thinking is the discipline that integrates all the disciplines into a coherent body of theory and practice. This discipline enables people to better understand interdependency and change. Systems thinking framework enables people to understand complexity of organizations, the multiple feedback processes in organizations, and the innate tendencies of organizations to grow or stabilize over time. Systems thinking makes understandable the subtlest aspects of a learning organization (Senge, 1990: 12). People in a learning organization understand that for that organization to survive it has to more than just adapt but adaptive learning must be joined by “generative learning”, learning that enhancing the members to capacity to create (Senge, 1990: 14).

Senge (1990: 57-67) identifies what he calls the “laws of a learning organization”. Through the laws of the learning organization, Senge wants to reverse the impression that the world is made up of separate and unrelated forces. The “laws of a learning organization”, according to Senge help to show that solutions to problems of organizations require not just the application of conventional approaches and symptomatic solutions but solutions to organizational problems require an understanding of the entire system of an organization and its environment. Systems thinking demands a shift of mind so that people in organizations are able to see “structures”, that is, see wholes and are able to discern high leverage change from low leverage change. High leverage interventions are those that address a source of a problem rather than symptoms of a problem. Systems thinking makes organizations understand that they are unable to solve problems because they think in linear, nonsystematic terms. Through thinking in systems terms organization begin to realize that events/phenomena interact to create a “system” a set of variables that influence one another, a dynamic complexity and not detail complexity. The essence of the discipline of systems thinking lies in seeing relationships rather than linear cause-effect chains, and seeing processes of change rather than snapshots.

Senge (1990: 79-80) identifies three concepts which can be seen as building blocks of systems thinking and which enable leaders to understand how organizations function, these are, reinforcing (amplifying) feedback, balancing (stabilizing) feedback, and delay. In a reinforcing process or loop a small change builds on itself. A small movement is amplified, producing more movement in the same direction. An idea or event will build on itself with good results in a virtuous cycle or with bad results in a vicious cycle. This would reinforce
accelerated growth or accelerating decline in an organization. Seeing an organization as a
system allows leaders to influence the way it works.

A reinforcing loop, by definition, is incomplete. A vicious or virtuous cycle does not occur by
itself. Pure accelerating growth or decline rarely continues unchecked in nature, eventually
limits are encountered – which may slow growth, stop it, divert it, or even reverse it. These
limits are balancing feedback or balancing loops. Balancing loops create processes of
resistance, which eventually limit growth. Balancing loops are often found in situations
which seem to be self-correcting, whether the participants like it or not (www.solonline.org/pра/tool/loops.html). Resistance to change for example is a balancing
process in an organization. If a leader encounters resistance he/she should not push harder
in order to overcome resistance but should identify the source of resistance and address it.
Artful leaders focus their change efforts directly on the norms and power relationships
within which resistance is embedded (Senge, 1990: 88).

Systems are also marked by delay. Delay is natural in systems (Senge, 1990: 89). Delay
refers to a time lag between the action (intervention) and the intended consequence, when
the effect of one variable on another takes time. Delays are often unappreciated and lead to
instability; they are either unrecognized or not well understood. Failure to understand that
processes in systems are marked by delay results in frustration. This can result in
“overshoot” going further than needed to achieve a desired result. When results don’t seem
to be forthcoming the tendency is that people become impatient and abandon the
intervention which in the course of time would have provided a solution. Unrecognized
delays can also lead to instability and breakdown, especially when they are long. Aggressive
action often produces exactly the opposite of what was intended. It produces instability and
oscillation instead of moving towards a goal. Leaders in organizations look for immediate
results but systems are not geared towards that.

Tools and techniques which Senge (1990: 95) refers to as system archetypes or generic
structures help people to see how to change systems more effectively and thus be able to
know how to manage organizations effectively. Systems archetypes aid managers to see
structures that are at play in organizations and how to gain leverage in those structures.
The most common archetypes are limits to growth archetype and shifting the burden
archetype.

The effect of limits to growth archetype manifests itself in plateauning or declining
development in a section of an organization or of the entire organization itself. The natural
response to this is that managers tend to push even harder trying to arrest or reverse the
plateau or decline. This might mean management allocating more resources to address the
problem. According to Senge (1990: 95) this does not usually yield the desired results. He
suggests that the best solution would be to “identify and change the limiting factor”. This
implies that unless the cause of stunted growth is identified pumping more and more
resources into a problem in most cases does not work. He adds that this may require actions
one may not yet have considered, choices they never have noticed, or difficult changes in how
the system operates.

Shifting the burden refers to applying symptomatic solutions to problems while leaving the
problem intact. Symptomatic solutions to problems are “quick fixes” they solve the problem
temporarily. This is a common strategy amongst leaders in organizations. Leaders bring
consultant to sort out poor performance of an organization. Consultants solve the problem
but leaving the ability of the leader to solve related problems having not improved. Senge
points out that shifting the burden structures is responsible for a recurrence of one and the
same problem and the same symptomatic solution being administered. He warns that
shifting the burden structures often underlie unintended drift in the health of an
organization, this is reflected in drifts in strategic direction and erosion in competitive position. The longer the drift goes unaddressed fundamentally, the more difficult it becomes to reverse the situation. Dealing effectively with shifting the burden structures requires a combination of strengthening the fundamental response and weakening the symptomatic response. Strengthening fundamental responses requires a long-term orientation and a sense of shared vision and weakening the symptomatic response requires telling the truth about “looking good” solutions (Senge, 1990: 111). Senge adds that at times it may be necessary to adopt symptomatic solutions but they need to be acknowledged as such and be combined with strategies for fundamentally solving the problem.

Senge (1990:340) argues that learning organizations require a new view of leadership style and not the traditional style. He points out that the traditional style of leadership is characterized by an individualistic and non-systemic world view. Traditional view of leadership assumes that people are powerless they lack personal vision and are not able to master the forces of change. Against this traditional view, he suggests a “new” view of leadership that centres on subtler and more important tasks. In terms of the new view of leadership, leaders are designers, stewards and teachers. They are responsible for building organizations where people continually expand their capabilities to understand complexity, clarify vision, and improve shared mental models. This is the essence of a learning organization. In a learning organization the leadership takes a stand and inspires the vision.

There is very little to suggest that the concept of systems thinking and learning organization is used as a frame of reference in the organizational management practice. Even the study by Nhlabathi (2006) attests to this fact. This explains why organizations do not operate beyond mediocrity. If organizations adopted systems thinking and learning organization approach they would derive the following benefits, they would operate as a unit which is guided by a shared vision; they would be aware that the world is made up of separate and related forces; they would understand the difference between interventions that address symptoms of problems and those that address the source of a problem; and, they would understand that quick fix solutions cannot be relied upon in the long run.

5. How the concept of systems thinking influenced management and organizational theory.

Even though the concept of systems thinking and learning organization has not consciously guided management practice, it has influenced management scholarship and theory even more than people are aware of. The discussion below addresses itself to that fact.

5.1 Dynamism in systems for sustainable superior results

According to systems thinking and learning organization framework organizations have to constantly change and adapt in order to stay competitive and relevant. This idea has long been accepted in the organizational development literature. Scholars who have written on this subject include Kotter (1998), Heifetz and Laurie (1997) and Foster and Kaplan (2001).

Kotter (1998) points out that to cope with new technological, competitive and demographic forces, leaders in every sector have sought to fundamentally alter the way their organizations do business. According to Kotter organizations must evolve and adapt in order to survive. Heifetz and Laurie (1997: 124) echo this view and they point out that organizations face adaptive challenges. They further add that changes in societies, markets, customers,
competition and technology around the globe are forcing organizations to clarify their values, develop new strategies and learn new ways of operating.

The importance of a dynamic organization is also underscored by Jack Welch, as quoted by Haines, et al (2005: 18), who point out that if a CEO is still doing things now the same way they did them five years ago, they are doing something wrong. Foster and Kaplan (2001:30) emphasize the importance of organizational dynamism when they quote Schumpeter who wrote in 1938 on the process of creative destruction. Schumpeter wrote that sustainable success of a company depends on its ability to deal with the processes of creative destruction, the challenges of incessant renewal, generated by its market environment. Thus the capability to change, and to adapt, as well as to renew and to innovate become core aspects of an organization’s prospect for sustainable success. Beer et al (1990:158) support this view by adding that the key to competitive success in organizations is to transform the way they function.

Kim and Mauborgne (1997: 103-107) suggest that in order to become a high growth organization, the organization needs to look at the way it does business. According to Kim and Mauborgne successful companies follow strategic logic of value innovation as their framework. The strategic logic of value innovation helps in setting them apart from the pack.

Organizations that cannot embrace adaptive challenges face a shortened lifespan. One of the attributes of living and growing systems is that they change. This means that no matter what journey an organization is undertaking, every organization is constantly required to change or die (Haines, et al, 2005: 18). Few large corporations live even half as long as a person (Senge, 1990: 17). Senge goes on to point out that a Royal Dutch/Shell survey found that one third of the firms in the Fortune “500” industries listed in 1970 had vanished by 1983. Shell estimated that the average lifetime of the largest industrial enterprise is less than forty years. This view is also supported by de Geus (1988: 70) and by Foster and Kaplan (2001:18). So for organizations to extend their lifespan, they have to master the adaptive skills.

5.2 Popular acceptance of the change process for sustainable superior results

Scholars (Strebel, 1996; Bridges and Mitchell, 2000; Kegan and Lahey, 2001; Kanter, 2003; and Holbeche, 2005) who write on the subject of organizational management have also suggested that all the parts of a system have to work as a unit or a team if an organization is to maintain superior performance.

Holbeche (2005: 6) suggests that organizational change is a human process. Successful organizational change requires people to change their behaviours. The most effective change occurs when employees commit to the change effort. On the same subject Kanter (2003:59) writes on the importance of the psychological turnaround in the process of bringing distressed organizations from the brink of failure. Kanter maintains that almost all distressed organizations suffer from what is called organizational pathologies. Symptoms of organizational pathologies include secrecy, blame, isolation, avoidance, passivity and feelings of helplessness. If organizational pathologies are not attended to they reinforce one another in such a way that the organization enters a kind of death spiral. In order to arrest this process Kanter (2003: 64-66) suggests that three related activities be undertaken, these are, engendering respect, sparking collaboration and inspiring initiative. Putting an organization on a positive path towards future success also requires that leaders energize their workforce, throughout the ranks.
The issue of popular acceptance of the change process for sustainable organizational development is also highlighted by Hudson (2001: 45). Hudson maintains that one way of enhancing success in a change process in an organization is by having fun as an integral part of an organization’s culture. This he maintains has numerous benefits. It can break down jealously guarded turf boundaries. It can foster an esprit de corps throughout the company and greater camaraderie on teams.

Jack Welch (the former CEO of General Electric) as quoted by Heller (2001: 594) points out that a common culture for an organization is imperative for success. Shared value systems and attitudes of an organization are determinants of success. In order to promote a shared culture, Welch suggests that organizational leaders should establish key company values, change the behaviour of the individuals, and abolish bureaucracy in favour of a creative, enterprising climate of best practice. Fundamental to changing the culture of an organization is altering people’s behaviour. People’s behaviour can be changed by developing a climate of trust: empowering people to improve their own performance; cut out wasted work, time, and cost; and establishing a new corporate culture of collaboration and sharing. Boundarylessness is one of the signature concepts of Welch (Krames, 2002: 41). To spark productivity and break down the walls that he felt were killing the company, according to Kramer (2003: 42) Welch sought to topple every barrier. Welch believed that any wall was a bad one. In a boundaryless organization information flows easily. There is nothing to impede the seamless transfer of decisions, ideas and people.

Also Ashkenas et al (2002: 4) write on the concept of boundaryless organization and point out that twenty-first century business needs to shift from rigid to permeable structures and processes and create something new: the boundaryless organization. Whereas the twentieth century organizational success was influenced by the factors of size, role clarity, specialization and control, the success factors for the twenty first century organization are speed, flexibility, integration and innovation. These success factors can only be operationalized in a boundaryless organization.

Kanter (1991) interviewed Raymond Smith, the CEO of Bell Atlantic on managing change at Bell Atlantic. Smith told how Bell Atlantic was transformed from being a monopolistic and bureaucratic corporation into one that is both efficient and entrepreneurial. Smith identified the most important determinants of success in an organization being the effectiveness of day-to-day interactions between human beings. If those contacts are contentious, turf-oriented, and parochial, the company will flounder, bureaucracy will grow, and internal competition will be rampant. But when employees behave in accountable, team-oriented and collegial way, it dramatically improves group effectiveness.

The above discussion shows that the concept of systems thinking has been prevalent in management scholarship but there could be questions on it being adopted as a framework in management and leadership practice.

6. Conclusion

Conventional approaches to organizational development have not brought about sustainable competitiveness in organizations. Turnaround strategies based on frameworks such as total quality management, reengineering, right sizing, restructuring, cultural change, etc. have brought temporary solutions. It is for this reason that this paper suggested systems thinking and learning organizational approaches as frameworks for sustainable competitiveness in organizations. Systems thinking approach provides a different perspective to understanding world problems. This concept helps people see patterns in the world and identify specific leverage points that can be used to produce lasting, beneficial changes in organizations.
Systems thinking and learning organization concept has influenced scholarly thinking and theory but there is doubt if this theory is adopted in practice. Doubt arises out of the number of organizational failures which are frequently reported. Systems thinking and learning organization theory would help address some of the problems that leaders in organizations face.

7. References


Juvenile Diversion: In Sea Rch for A New Paradigm-Through To “Community Justice”

Zondi C Z 56 czondi@pan.uzulu.ac.za
Department of Criminal Justice
University of Zululand
South Africa

ABSTRACT

This article focuses on diversion and accounts for the offenders in and around Durban diverted to National Institute for Crime Prevention and Reintegration of Offenders (NICRO) for treatment and rehabilitation from December 2004 to July 2005. A method and technique of mass observation, was implemented to achieve specific aims. A pre-coded, closed-structured information schedule was used to gather information from 270 case files of diverted juvenile delinquents at Nicro, Durban. A purposive sampling technique was used to collect data as diverted juveniles could not be interviewed. The findings are that Durban’s Youth Court referred the largest number of juvenile offenders through diversion to Nicro. The study emphasizes different aspects of diversion, namely how many juveniles were allocated to the various programmes, family structure of diverted juveniles, juvenile offending and family status of diverted juvenile offenders. Further findings were that: the majority of diverted juveniles 88 (32.0%) lived in Umlazi Township, predominant black residential area at the time of their diversion to admittance at NICRO, the largest number 62(23%) of juveniles did not pass Grade 8, most commonly committed crimes were theft (type of theft was not specified in diverted juvenile files) and shoplifting and that family status of diverted offenders showed that out of the 275 cases examined in this study 176 of the juvenile offenders were from broken families. The study concludes that further in-depth research into juvenile diversion at national level should be undertaken to evaluate the success or failure rate of diversion in a wider context as an alternative to imprisonment.

Introduction
Juvenile diversion is not a new idea or concept. It is perhaps just another ‘label’ attached to a practice that has been in use for centuries. For instance in 1967, the President Commission on Law Enforcement and Administration of Justice evaluated the status of the criminal justice system in the United States and made recommendations to improve different components. This happened at a stage when diversion was advocated as an alternative for dealing with youth problems (Whitehead and Lab 1990:306) Diversion is dependent upon decisions taken by juvenile justice practitioners. The rehabilitative value of diversion resides in efforts and actions directed at leading or reintegrating the juvenile offender back into the community with intervention and assistance by informal social, non-justice institutions (Simonsen & Gordon 1982:388).

Juvenile crime has captured the attention of many institutions and practitioners of different professions like the Police, Courts, Corrections, Social Welfare, Education and non-government organizations, inter alia the National Institute for Crime Prevention and Reintegration of Offenders (NICRO)

56 C.Z. Zondi is a Lecturer in the Department of Criminal Justice, University of Zululand, South Africa
The handling and treatment of the juvenile offender remains a considerable problem to governments around the world, and South Africa is no exception. In the past, thousands of young people have awaited trial in prisons and police cells in South Africa. According to the paper presented by Allsop and Thumbaro of South Africa’s National Association of Child Care Workers (NACCW) in August 2002 in New York, in April 2002 there were 2334 children awaiting trial in South African prisons. Often, their parents or guardians were not aware about their whereabouts and when they got into trouble through the commission of juvenile crime, they seldom had legal representation in court. Many have not even experienced the assistance of a probation officer who had to render visitation and locate the parent or guardian of the juvenile. In the pre-democratic era, retribution in the form of imprisonment and whipping were standard sentences handed down by South African courts to juveniles found guilty of having committed crime. According to Midgley (1975:107) 57% of those convicted were whipped. During the middle to late 1970s and 1980s hundreds of young people were detained during the state’s emergency ruling, causing a national and international outcry. According to the proposal for policy change young people who entered the criminal justice system were not always treated humanely. In fact, until democracy, there was no acknowledgement of children’s rights of those in detention (Juvenile Justice for South Africa 1994:3).

The Department of Correctional Services generally regards awaiting-trial detainees as persons with a unique status, because they are being protected by a set of rights in terms of Sections 2(1) and 35(1)-(4) of the Constitution (Act 108 of 1996). For instance, awaiting-trial detainees, especially first offenders that have committed non-serious offences are, in terms of the responsibilities of the Integrated Justice System, to be detained separately from sentenced offenders (White Paper on Corrections, 2004: 57-60). Following international trends, the South African Constitution (Act 108 of 1996) clearly stipulates that:” (a) children under the age of 14 years have the right not to be detained at all (except as a last resort) and, if detained (b) then only for the shortest possible span of time, (c) not to be detained together with other detainees over the age of 18 years, (d) to be treated in manner and detained under conditions consistent with their age, and (e) to be granted the opportunity of legal representation at the state’s expense. Instead of detaining children, alternative sentences and diversion efforts should be considered “(White Paper on Corrections 2004:79-80).

NICRO was established on 6 September 1910 as a South African Prisoner’s Aid Association. In 1970, the name of this Association was changed to the National Institute for Crime Prevention and Rehabilitation of Offenders. In 1992, after joining ‘Justice for the children: no child should be caged’ campaign with other non-government organizations (NGOs), NICRO introduced diversion programmes for young offenders with the explicit aim of channeling (diverting) them away from the juvenile justice system into programmes that would make them accountable for their actions (NICRO News nd.). In 1997, the word ‘Rehabilitation’ was replaced with ‘Reintegration’ (NICRO Newsletter: nd.). Diversion represents an attempt by governments to find alternative ways of dealing with problem youth (juvenile delinquents) outside the formal criminal justice system (Whitehead & Lab 1990:305).

**Diversion**

Diversion entails an attempt to find alternative ways of dealing with crime-related social problems in juvenile justice context. In particular, it means processing and treating juvenile offenders who have committed crimes outside the parameters of the formal juvenile justice system, primarily to avoid them being ‘harmed’ if processed through the formal system. Diversion programmes should not be seen as preventative, but rather as rehabilitative (Whitehead & Lab 1990:265). Chapter 6 of the Child Care Act 74 of 1983 (as amended) stipulates several purposes of diversion.
Diversion programmes are *resources* that provide direct services and/or referral assistance to juveniles who appear in a juvenile court on a criminal charge and who are likely to be diverted from further formal justice processing and, instead, referred to such programmes in lieu of being tried and sentenced if found guilty. Diversion programmes are specifically designed for diverted juveniles, and aim at “...producing institutional change by fostering improvement in and new commitments to youth services by existing agencies” (Simonsen & Gorden 1982:373-374). These authors contend that, although diversion is being viewed as the *turning away* from the formal juvenile justice system, to *turning to* something else (diversion programmes), present trends in juvenile justice that tend to be more human rights oriented and allowing it to look more like the adult justice system. Siegel and Senna (1988:442) opine that *diversion* refers to *screening out* juveniles from the juvenile court without being formally prosecuted. The *screening process* involves actually more than just turning juveniles away from the formal system. It encourages juveniles to participate in specific standardised programmes or activities by expressed or implied threat of further prosecution, should they fail or refuse to participate in those programmes intended to change their attitudes towards the commission of crime.

The United States of America pursues a three-step classification of diversion (Whitehead & Lab 1990:310):

i. *True diversion* actually entails ‘direct, informal referral’ of juveniles by the police, which means the total release of juveniles from custody. Police officers would make suggestions and recommendations to the juveniles and/or their parents about where to get assistance to deal with the problem (crime). No follow-ups are being instituted to verify conformity with the referral:

ii. Proper *screening of juveniles* with goal directed follow-ups has been viewed synonymous with ‘true diversion’. Referral of juveniles to sources or agencies without any follow-up actually means totally ignoring the problem. Opponents of true diversion views diversion to be the substitution of a new, non-juvenile justice system programme instead of a formalised justice system of processing, adjudication and retribution and

iii. *Minimising penetration* into the formal justice system could take place at four stages of the juvenile justice process, the primary aim being to prevent juveniles from experiencing the full force and extent of the formal justice system. The first attempt to minimise or prevent entering the system occurs at ‘screening’, and subscribes to the notion of ‘true diversion’. The second stage at which diversion could take place is after an arrest of a juvenile but before any further involvement in the system. This would mean police intervention and referral to a non-justice system or non-governmental agency. The third phase involves processing where diversion is likely to become a reality and, lastly, diversion could take place after adjudication, but then before sentencing. Diversion at this point in time could actually be equated with de-institutionalisation.

Although provincial departments of Social Welfare are increasingly involved as a *source of diversion*, NICRO remains the primary provider of diversion programmes to South African youth courts (Sloth-Nielsen & Muntingh 1992:000-16). NICRO offers five diversion programmes (Muntingh & Shapiro 1993-4):

i. *Youth Empowerment Scheme (YES)*, a life training skills programme involving young people and their parents or guardians;

ii. *Pre-Trial Community Services (PTCS)*, allowing youth offenders the opportunity to perform community services in lieu of prosecution.
iii. *Family Group Conferencing (FGC)*, which is similar to victim offender mediation, but also involves the family and friends of the youth offender in a process aimed at restoring the equilibrium and to prevent further offending;

iv. *Victim Offender Mediation (VOM)*, which brings victims and offenders together in an attempt to reach an agreement on the way forward and to satisfy the needs of both parties and

v. *The Journey*, which is an intensive and long-term programme, created for those youth offenders who are most at risk of relapsing into crime, and who are challenged to engage in a long-term process of working towards constructive and independent living.

A recent empirical study into *juvenile diversion* by Badenhorst and Conradie (2004:115-130), discussed a new diversion programme: the South African Youth Sex Offender Programme (SAYSTOP) which is a joint programme between the University of the Western Cape and NICRO. Established in 1997, this programme is restricted to the Western Cape and the Eastern Cape only, consists of 2-hour weekly sessions with diverted juvenile delinquents and stretches over a 10-week period. It targets young sexual offenders in the age group 12 to 18 years. The study devoted special attention to the provisions of the Child Justice Bill (Act 49 of 2002).

This study asks the question: ‘Does diversion work?’ ‘What is the role of communities?’ ‘The consequences of diversion, the role of legal presentation in the SA diversion process and the Child Justice Bill, Act 49 of 2002.’

Empirically, the study was conducted among 307 magistrates in Gauteng regarding several aspects of diversion and was concluded in February 2003. Only 97 magistrates responded, yielding a return rate of 31.59% (Badenhorst and Conradie 2004:115-130).

The current study ‘Juvenile Diversion: in Search for a New Paradigm’ was conducted during December 2004 to July 2005 in Durban. A total of 275 case file were scrutinised to obtain an overall 'picture' of the juvenile offenders diverted in and around Durban for treatment and rehabilitation. This study emphasises a different aspect of diversion, namely how many juveniles were allocated to the various programmes.

**Aims of the study**

The study set out to achieve the following aims:

(a) To render a theoretical exposition of the nature and extent of juvenile delinquency;

(b) Offer appropriate theoretical explanations for the existence of this kind of social phenomenon;

(c) To provide a theoretical exposition of juvenile diversion as an alternative to the retributive processes of the formal juvenile justice system;

(d) To focus attention particularly on the work done by NICRO, and

(e) To facilitate descriptive analysis regarding juvenile offenders diverted to NICRO in Durban.

**Method of study and research design**

The social survey method followed in the current study, allowed for the construction and use of a pre-coded, closed-structured information schedule, designed to be compatible with information contained in the case files of diverted juvenile delinquents at NICRO, Durban. The information schedule that was used in conjunction with a coding sheet, allowed the convenient transfer of data to SPSS statistical analysis program. All youth courts in and around Durban have not diverted juveniles to NICRO. Pinetown’s youth court, for instance,
did not refer a single case to NICRO in the six months prior to the commencement of the present inquiry. Secondly, available records from the personal files of diverted juveniles showed missing information. For instance, some case files did not reflect complete demographic information about the units under scrutiny. This missing information weakened any prospects of being capable to rely on ‘known sampling estimates’ and were, as a matter of comprehensiveness, recorded under ‘unknown’ categories. The researcher was however, convinced and satisfied that this kind of missing data did not seriously influence the final outcome of the study.

Given the shortcomings listed above, judgmental (purposive) sampling was chosen as the appropriate technique to collect the research data for statistical analyses. The mere fact that diverted juveniles could not be interviewed personally, made this sampling technique a suitable tool to use. Written documents or other types of records (e.g. case files of diverted juveniles) maintained by the police or other agencies (e.g. NICRO), provide excellent ‘criminal histories’ of juvenile delinquents. Such documents facilitate easy access to administrative particulars, demographic profile and offence particulars of diverted juvenile, although information contained in such case files are usually not disclosed to third parties because of ethical considerations, ‘...criminal justice researchers commonly obtain access’ (Maxfield & Babbie 1995:176). Prior written permission to access such case file information for the current study was obtained from NICRO, Durban prior to the start of the research. All 275 case files of juveniles diverted to NICRO by the Durban juvenile (youth) courts during December 2004 to July 2005, were perused and scrutinised for purposes of description of diverted juvenile and analysis. Frequency cross-tabulations were implemented to portray data in raw scores (N) and percentages (%).

Analysis of data

The data provides a clear picture of the frequency distribution of diverted juvenile delinquents among the various youth courts in and around Durban. The Durban Youth Court committed the largest number of juvenile offenders through diversion to NICRO for treatment and eventual reintegration into the community, namely 191 (69.45%). The Phoenix Youth Court diverted 28 (10.18%) juvenile offenders to NICRO, followed by Umlazi with 16 (5.82%), Port Shepstone with 11 (4.0%), Verulam and Amanzimtoti with 10 (3.64% respectively), Ntuzuma and Tongaat 2 (0.73%) respectively, Chatsworth 1 (0.36%) and other areas 4 (1.45%).

Sample demographics

According to gender, male juveniles diverted to NICRO were in the majority (176 or 64.0%) compared to 87 (31.6%) females. The gender of 12 (4.36%) juveniles could not be established. In terms of age, most of the diverted juveniles were between 15 and 17 years (178 or 64.7%), followed by 56 (20.4%) below 15 years and 32 (11.64%) who were between 18 and 21 years. In terms of race, altogether 216 (78.5%) African juveniles were referred to NICRO for treatment, followed by 45 (16.4%) Indian, 3 (1.1%) Coloured and 2 (0.73%) White delinquents. Considering education, the largest number of juveniles (62 or 22.5%) had not passed Grade Eight at school, followed by 58 (21.1%) who had only passed Grade Ten (Std. 8) at secondary school level. In terms of occupation, 213 (77.5%) were scholars, while 13 (4.73%) were enrolled at a tertiary institution. Unemployed (1.45%), self-employed (0.36%) and skilled/semi-skilled (1.09%) juveniles constituted only a small percentage of diverted offenders (Table 1).
Family structure

The family remains the frontline defence against juvenile delinquency; a broken or disrupted family life may encourage any pre-existing forces operating in a child’s life to produce delinquency (Siegel & Senna 1988:243). In this regard, social and family conditions play an important role in the development of delinquency. The very nature of the child’s family structure, especially that of children growing up in disadvantaged families, is crucial in determining the kind of social problems such children may experience in their later life. Lacking basic skills through poor training and education necessary to achieve social and economic success in life to survive independently, easily contribute to maladjustment and subsequent delinquency (Senna 1989:171). In the current case file analysis on who cared for the diverted juveniles at home, only 23 (8.4%) of the diverted juveniles were raised by both or either one of the parents. In 6 (2.2%) cases the juvenile offenders reared by a grandmother/father, or by an uncle or aunt respectively. Unfortunately, in 228 (82.9%) of the diverted cases, the socialisation agent not be determined due to incomplete information.

Juvenile offending

The most commonly committed crimes among the sample of juveniles diverted to NICRO by Durban (and surrounding areas) courts appear to be that of theft (219 or 79.6%). Nineteen cases of shoplifting (4.73%) were also recorded (Table 2). Drug-related offences accounted for 19 (6.91%) of the cases, and housebreaking for 5 (1.82%). Relatively small incidences of vandalism, pick-pocketing, mugging, assault and gangsterism were also observed (Table 2). Since a large number of juvenile offenders were scholars, according to Vedder as cited by Cronje, Van der Walt, Retief & Naudé (1987:185) dislike of school that results in irregular attendance or even non-attendance, may be regarded a major contributory factor to antisocial behaviour among juveniles. Individuals, including children, steal because they want to satisfy their physiological need for survival. Thirteen juveniles (4.73%), apparently from low-income households, had shoplifted. According to Kratcoski and Kratcoski (1990:54:161), in poverty and delinquency theory, (not validated) youth who have less interest in school or who realise they are not capable of achieving their goals in life, are likely to develop various deviant behaviour characteristics like engaging in activities that produce immediate ‘kicks’ or ‘gratification’, example drug-related offences. Use of drugs in 19 cases (6.91%) is indisputably related to the physical and psychological changes, needs and demands associated with acceptance by friends, desire for adventure, peer group relationships, etc.

Diversion

The primary aim of diversion revolves around rehabilitation by means of turning juvenile offenders away from the formal criminal justice system. Diversion takes many forms and it requires the juvenile offender to acknowledge that he or she did commit the offence and take responsibility for his or her behaviour. Of the initial 275 cases diverted to NICRO, 240 (87.3%) were accepted onto some programmes by this organisation. Most of the diverted juveniles were first time offenders who, after having been apprehended and diverted to NICRO, showed remorse after continual observation over a period of time and accepted responsibility for their deviant actions. Fourteen (5.1%) refused to accept responsibility, while 4 (1.5%) identified as children in need of care were referred to probation officers. Two (0.7%) did not want to co-operate with NICRO, while another one’s (0.4%) offence was too serious to warrant diversion. Fourteen (5.1%) cases of alcohol dependency were referred to Alcohol Anonymous for rehabilitation.

Allocation to the different treatment programmes commenced as follows: Youth Empowerment Scheme (YES) · 209 (76.0%), Pre-Trial Community Service (PTCS) · 19 (6.9%), Individual Counseling · 2 (0.7%), Combination of Programmes · 10 (3.6%). Thirty-five (12.7%) were rejected by NICRO.
For the juvenile to be accepted to NICRO it is imperative that the accused admits guilt on the charges otherwise he or she is not suitable and the case should proceed to court where the accused will have the opportunity to state his case.

The Youth Empowerment Scheme is intended to minimise exposure to the criminal justice system and the concomitant negative consequences of being labeled a delinquent. It also strives to encourage young offenders to accept responsibility for their actions and to behave within the broadly accepted societal norms in order to prevent further involvement in criminal activities (NICRO News n.d.; Van der Sandt & Wessels 1993:18).

**Family status of diverted juvenile offenders**

The concept family refers to any group of people related by blood or marriage, especially to grown-ups and their children (Mqadi 1995:25). It is a social unit, says Good (1982:8), made up of a father, mother and their children (the so-called nuclear family). The idea of family varies according to culture and social organisation of a particular society. The traditional African society defines its own family as one that consists of more than a father, mother and their children. Great parents, grandparents, parents, uncles and their wives, aunts and their husbands, cousins and nephews, constitute what is known as an ‘extended family’ (Mqadi 1995:25). Mqadi (1995:28) contends that the concept family is also affected by the ‘structure’ and ‘composition’ of the family. The following two types of family structures, with negative connotations, are distinguished:

*Broken family.* A family may be ‘broken’ either physically or psychologically. Physically broken families may experience the loss of either of the two biological parents through death, divorce, desertion or long absence of either parent as a result of employment or imprisonment. Psychologically, a broken family is one in which parents physically stay together, but the relationships, parental control and obligations are in constant conflict. Siegel and Senna (1988:244) contends that ‘...a broken home is a strong determinant of a child’s law-violating behavior.’

*Incomplete family* closely relates to a broken home and is characterised by a missing parent because of marriage that never took place. In contemporary society, the single parent (mother) usually controls and manages the family (illegitimate children). Single-parent households have become a common feature. The traditional view of the male being the breadwinner and the female the child-rearing parent is also slowly diminishing (Siegel & Senna 1988:244).

Statistical information about the family status of juvenile offenders diverted to NICRO, Durban shows that only 89 (32.4%) come from complete families, i.e. where both biological parents are still alive and live with the juvenile offenders at the time of the commission of their criminal violations. However, in 176 (64.0%) of the cases, juvenile offenders are from broken homes, while only 2 (0.7%) come from incomplete families.

The occupation of both parents is often closely related to the family status of juvenile offenders. In the current study, the data show that in 132 (48.0%) of the recorded cases, only one parent was (at the time of the study) employed. In 98 (35.6%) of the households of diverted juveniles, both parents were unemployed. In only 31 (11.7%) cases, both parents were employed. Young children from low income households are apparently more vulnerable to delinquent acts than is otherwise the case. Kratcoski and Kratcoski (1990:55) found that a definite relationship between poverty and delinquency exists.
Conclusion
In its White Paper on Corrections in South Africa, the Department of Correctional Services is adamant that young children under the age of 14 years have no place in correctional facilities. Diversion and other alternative sentences and detention facilities should first be considered in the case of young offenders, before they are referred to correctional centers (White Paper 2004:79).

Authors like Larry Siegel and Joseph Senna (1988:442) are convinced that diversion is apparently one of the most popular ways of juvenile justice reform. Juvenile diversion has the following advantages:

i. It is an indispensable ingredient of an efficient juvenile justice system, because it takes the edge off in terms of caseloads;

ii. It is a more flexible institution that is capable of dealing with inadequate formal juvenile justice system treatment;

iii. It may assist legislators and other government authorities in reallocating resources to programmes that are more successful in the treatment of juvenile offenders.

iv. It amounts to low cost treatment of juvenile offenders that would otherwise be a more expensive venture in the case of institutionalization and

v. It assists juveniles in avoiding the stigma of being labeled a delinquent, believed to contribute to developing a delinquent career.

Diversion programmes have been designed to offer juvenile offenders who have committed non-serious offences the opportunity of being ‘removed’ from the formal juvenile justice system with its retributive character, in an attempt to provide them with non-punitive treatment, and avoid them of being stigmatised as ‘juvenile criminals’.

Although not a ‘cure-all’ for various forms of juvenile delinquency, diversion at least provides an alternative to formal and official processing of young offenders that could have otherwise been dumped in a justice system that vigorously pursues retribution as its chief aim in sentencing. Diverting young offenders away from that formal system would help the official system to focus its attention and energy more effectively and efficiently on more serious law violators, while leaving ample room for treating and rehabilitating the needy youth who deserve to be given a second chance (Siegel & Senna 1988: 445).

Although the current study is exploratory in nature and somewhat limited in scope, it nevertheless, points to the fact that the last word on juvenile diversion has not been spoken yet. In-depth research into juvenile diversion at national level should be undertaken to evaluate the success or failure rate of this source of juvenile offender treatment as an alternative to imprisonment.

Recommendations
The following recommendations are being introduced as they relate to the data analysed in the study and the policy makers can make use of them.

The role of the school in preventing juvenile delinquency can be best achieved if carried out in conjunction with the family. The role of the school should aim at maximising the learning process and elimination of factors which may have adverse effect on the learning process and create opportunities which enhance learning. Preventive strategies to high risk behaviour such as poor achievement at school, low resistance to peer influence should be introduced.
The school curriculum should focus on educating the youth about juvenile crime, dangers thereof and juvenile justice system youth about juvenile crime, dangers thereof and juvenile justice system, the negative effects of involvement in crime and also diversion. This can be achieved by providing the following programmes:

i. A programme that can improve self concept of young people especially those from poor questionable neighbourhoods and

ii. Instructing young people about drug abuse and other criminal acts preparing them to be responsible citizens.

Also of primary importance would be the proper establishment of the success or failure rate of diversion in each province of South Africa based on recidivism rate of juvenile offenders. Once this information has been secured, appropriate recommendations as to how South Africa’s diversionary process could be upgraded should be put forward for implementation.

References


NICRO Newsletter. n.d. NICRO: Cape Town.


Appendix

Tables 1 & 2 /...

TABLE 1 DEMOGRAPHIC PROFILE OF JUVENILES DIVERTED TO NICRO DURING THE PERIOD DECEMBER 2004-JULY 2005 (N=275)

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Frequency Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>176</td>
</tr>
<tr>
<td>Female</td>
<td>87</td>
</tr>
<tr>
<td>Unknown</td>
<td>12</td>
</tr>
<tr>
<td>Category</td>
<td>Count</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>275</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Below 15 years</strong></td>
<td>56</td>
</tr>
<tr>
<td>15 – 17 “</td>
<td>178</td>
</tr>
<tr>
<td>18 – 21 “</td>
<td>32</td>
</tr>
<tr>
<td>Unknown</td>
<td>9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>275</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
</tr>
<tr>
<td>African</td>
<td>216</td>
</tr>
<tr>
<td>Coloured</td>
<td>3</td>
</tr>
<tr>
<td>Asian</td>
<td>45</td>
</tr>
<tr>
<td>White</td>
<td>2</td>
</tr>
<tr>
<td>Unknown</td>
<td>9</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>275</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
</tr>
<tr>
<td>Below Grade 8</td>
<td>62</td>
</tr>
<tr>
<td>Grade 8 (Std. 6)</td>
<td>18</td>
</tr>
<tr>
<td>Grade 9 (Std. 7)</td>
<td>46</td>
</tr>
<tr>
<td>Grade 10 (Std. 8)</td>
<td>58</td>
</tr>
<tr>
<td>Grade 11 (Std. 9)</td>
<td>33</td>
</tr>
<tr>
<td>Grade 12 (Std. 10)</td>
<td>25</td>
</tr>
<tr>
<td>Unknown</td>
<td>33</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>275</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>4</td>
</tr>
<tr>
<td>Self-employed</td>
<td>1</td>
</tr>
<tr>
<td>Skilled/Semi-skilled</td>
<td>3</td>
</tr>
<tr>
<td>Scholar</td>
<td>213</td>
</tr>
<tr>
<td>Student</td>
<td>13</td>
</tr>
<tr>
<td>other</td>
<td>6</td>
</tr>
<tr>
<td>Unknown</td>
<td>35</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>275</td>
</tr>
</tbody>
</table>
## TABLE 2  OFFENCES COMMITTED BY JUVENILES DIVERTED TO NICRO: DECEMBER 2004 – JULY 2005 (N=275)

<table>
<thead>
<tr>
<th>Offence</th>
<th>Frequency Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Shoplifting</td>
<td>13</td>
</tr>
<tr>
<td>Theft</td>
<td>219</td>
</tr>
<tr>
<td>Pickpocket</td>
<td>1</td>
</tr>
<tr>
<td>Malicious Damage to Property</td>
<td>2</td>
</tr>
<tr>
<td>Housebreaking</td>
<td>5</td>
</tr>
<tr>
<td>Robbery</td>
<td>1</td>
</tr>
<tr>
<td>Assault (Common)</td>
<td>4</td>
</tr>
<tr>
<td>Drug-related Offences</td>
<td>19</td>
</tr>
<tr>
<td>Gangsterism</td>
<td>1</td>
</tr>
<tr>
<td>Unknown</td>
<td>10</td>
</tr>
<tr>
<td>TOTAL</td>
<td>275</td>
</tr>
</tbody>
</table>
Authors Index

Addison, C. 1
Buijs, G. 207
Chipeta G. 147
Gane, G. 9
Hadebe, M. 226
Jacobs D. 30
Jordan S. 194
Koenane, M. J. 12
Kwake, A. K. 127
Leroux, C.B.J., 39
Louw, P. 16
Magagula S.J, 202
Mostert J., 164
Mpepo, M. V, 21
Ndwandwe S, 139
Ngcobo N.R, 209
Nhlabathi SS, 232
Njiraine, D., 39
Nkomo N. 149
Ntetha M, 164
Ocholla, D. N., 39, 55, 65
Ocholla, L., 55
Onyancha B O, 81
Sitenei G., 96
Zondi Z. C., 244