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Appendix 1.1

Teacher-librarian's role

This extract is from Reynolds (2005, p.39-43):

The traditional role of the teacher-librarian was to provide access to resources (ASLA 2001, p.40), variously described as collectors, conservators and custodians of the documentary record of civilisation (Bundy 2001c, p.3) or hoarding bowerbirds (Cornock & Jones 2002, p.1). These labels describe the *librarian* aspects of the role. New roles identified in the literature are as '*filters and not funnels'* of information (Leppard 2003, p.5), dispensers (McLoughlin 2002, p.33) providing systems for effective information use in and beyond the school (ASLA 2001, p.34). They facilitate inquiry for understanding (Leppard 2003, p.3) and thinking process, problem-solving and critical reading skills (Carr 1990). As providers of information resources, teacher-librarians need to form part of a collaborative team to develop the potential for integrating ICTs in the learning process (ASLA 2001, p.21). They plan and co-teach collaboratively (Loertscher, 1988) and communicate with parents (Shaw 2003, p.6). Teacher-librarians need excellent IT skills (Cornock & Jones 2002, p.3) whilst recognising that information literacy and not information technology is the critical issue (Bundy 2003, p.3; Cornock & Jones 2002, p.3). *"We must re-image ourselves as proactive, knowledgeable leaders who are the educational interfaces between ICT and learning"* (Langford 2001, p.1).

They are involved in curriculum design as well as curriculum resourcing (Leppard 2003, p.6). Teacher-librarians help prepare students for information literacy (Harvey 2001, p.2): the competencies of collecting, analysing and organising information (Mayer 1996, p.3) thereby developing students into critical consumers of information (Nimon 2003, p.1) and independent, courageous explorers (McLoughlin 2002, p.33). Teacher-librarians uphold values, advocating and enabling the free flow of information and ideas through co-operation and sharing and a commitment to social inclusion (Bundy 2001b, p.9). Teacher-librarians thus perform a hybrid role as educators, managers and service providers (Mallan, Lunden & Elliot Burns 2001 , p.30; Harvey 2001, p.2) handling multimedia and telecommunications, information literacy and inquiry, learner needs analysis, collaboration and curriculum interaction (Tilley & Callison 2001). The teacher-librarian networks professionally and internally as a service-orientated, engaged leader and motivator (Cornock & Jones 2002, p.5),

an empowering collaborator (Sit 2003, p.2), partner in organisational learning (Okiy 2004, p.5) and knowledge navigator (Bonanno 2002, p.8). The teacher-librarian provides an atmosphere conducive to learning and understanding (Okiy 2004, p.5) and ensures dynamic and constructive interactions (Sit 2003, p.11) for the accommodation of curriculum change. The profession, not the place, defines the service. *"The value that teacher-librarians have is the opportunity to contribute skills and knowledge to key elements of a school's transformation plans"* (Leppard 2003, p.3).

It could be argued that learning and understanding are the prerogatives of the teacher rather than of the teacher-librarian. However, the label of teacher-librarian is a clear indication of the intention of the role. A teacher-librarian has a unique view of a school, functioning at grassroots level, interacting with learning areas, individual teachers, classes and individual students. This may be termed the *hamster's* view. At the same time, the teacher-librarian has a *helicopter* view (Garratt 2001, p.20): an objective overview of the learning processes in the school. It is bifocal vision: the ability to see on two planes at once. Simply put, the teacher-librarian sees the big picture from a unique perspective. The teacher-librarian's role is also a non-threatening one. History and Geography teachers may be threatened by each other's presence in the Human and Social Sciences learning area. In contrast, the teacher-librarian has no territory to defend (Reynolds 2002, p. 9). Todd suggests that the difference between teacher-librarians and teachers is that the teacher-librarian's agenda is open ended learning, whilst the teacher's is the limit of the assignment, syllabus, subject or exam (Todd 2000[1]). The teacher's place is in the classroom. A knowledge manager's role is a co-ordinating one working with the different dynamics between teachers, curriculum, students and management within the school as well as networking beyond it. The teacher-librarian's classic role of being proactive in terms of information needs is critical in times of change. It is here that the teacher-librarian's bifocal view has value and moves the profession from one of information provision to a leadership role. It is the combination of understanding user needs, understanding the educational environment, understanding the need and purpose for change and proficiency with both creating and using the tools of change that give the teacher-librarian's role strategic value in the knowledge environment.

[1] Todd gave this response in answer to a question following his presentation.

Knowledge management is, according to Todd (2000, p.40) a significant concept for schools as engaged, interactive, networked learning communities. Todd challenges teacher-librarians to take on the role of knowledge-managers, rather than being just information managers, despite resistance from teachers who do not want to share their knowledge and expertise. Todd advocates imagination, engagement, alignment as requirements to overcome the barriers to teachers sharing knowledge. Similarly, Cram and Sayers (2001, p.3) argue that it is essential for librarians to understand knowledge management and participate in it; otherwise, they remain just information managers. Effective knowledge management requires interaction with the community of practice within which the Library is embedded.

Combes (2001, p.4) describes how the shift to inquiry-based outcomes affects the role of the teacher-librarian. She describes the *Sevenoaks* experience that has an infrastructure designed to facilitate and support an outcomes-focused, flexible learning environment that allows for the integration of ICTs across learning area programmes and encourages the development of online curriculum as a method of programme delivery.

The primary objective of the knowledge initiative is not to change the culture of the school or create a knowledge sharing culture, no matter how problematic the culture is perceived to be; nor is it the teacher-librarian's problem to change the culture of the school. Instead, the teacher-librarian's change role "*is to create a knowledge-information infrastructure that changes student outcomes … the construction of understanding and the construction of meaning"* (Todd 2001, p.18). Todd believes that if the construction of understanding and meaning is what learning is all about then a constructivist learning philosophy and practice centring on knowledge construction and knowledge use must define the role and practice of the school library. Todd argues that an appropriately defined vision for knowledge management, centred on constructivist learning, successfully implemented, may well change the culture of the school (Todd 2001, p.18).

There is consensus amongst the ASLA XVII Conference presenters (Bell, Cram & Sayers, and Langford & Wall) that it is the teacher-librarian's role to facilitate knowledge management in the school. They point out that the teacher-librarian can provide the innovation and co-ordinate the structures to support knowledge

management. An email on the *Infolink*[2] electronic mailing list expressed the view that teacher-librarians should *"get back to basics and forget about technology"*. Teacher-librarians are not technologists. The teacher-librarian role has focused on reading for pleasure and information as well as information literacy. Teacher-librarians are traditionally information managers. Their role should not be replaced but rather displaced with a broader, more holistic co-ordinating role relevant to the knowledge age. Getting back to basics is getting back to the learning and how it can best be supported. Learning is the bottom line.

Todd refers to his earlier research conducted together with Southon on teacher-librarians' views of knowledge management (Todd 2001, p.8). For some it was a "*must do"* because it was new. Others dismissed knowledge management, as they were *"too busy doing information management"*. For others it was information management in a new guise or *"a way of shoring up some kind of professional ego: the search for status, recognition, acceptance and value".* Todd advocates a focus on what we want our organisations to be rather than what we want to do:

> *[This] is future and goals directed, and constructed on people centred characteristics of working together with a common set of beliefs and values to achieve these goals … [T}he fundamental motive for knowledge management has to be contributing to the development of the smart school, one where knowledge construction and knowledge use are not simply espoused in mission statements and policies, but are the essence of learning and the day-by-day practices in school.* (Todd 2001, p. 8).

Teacher-librarians have moved from resource managers to information literacy, but the outcome is no longer the information literate student or school (Todd 2001, p.14). Todd suggests instead that the next wave is that of knowledge management and knowledge management is part of learning. The teacher-librarian's focus becomes one of integrating information, people and the knowledge process into dynamic, constructivist learning environments (2001, p.14).

> *"Your change role is to create a knowledge-information infrastructure that changes students' outcomes … the construction of understanding and the construction of meaning"* (Todd 2001, p.18).

[2] *Infolink* serves the South African teacher-librarian community through *Schoolnet SA.*

The issue for schools is twofold. Firstly, teacher-librarians must themselves accept the challenge of knowledge management and secondly schools need to recognise the potential contribution that a teacher-librarian can make to knowledge management. However, it is recognised that the multiple roles played by teacher-librarians may well fall within the ambit of knowledge management.

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Appendix 1.2

Ethical clearance certificate

UNIVERSITY OF PRETORIA

FACULTY OF EDUCATION

RESEARCH ETHICS COMMITTEE

CLEARANCE CERTIFICATE	**CLEARANCE NUMBER :** CS07/02/04
DEGREE AND PROJECT	PhD Curriculum Studies Crossing boundaries: convergence, mutuality and extensiveness in the integration of information and communication technologies in secondary schools: a case study
INVESTIGATOR(S)	Mary Reynolds - 23287137
DEPARTMENT	Curriculum Studies
DATE CONSIDERED	16 March 2007
DECISION OF THE COMMITTEE	APPROVED

This ethical clearance is valid for a period of 3 years and may be renewed upon application

CHAIRPERSON OF ETHICS COMMITTEE	Dr S Human-Vogel
DATE	19 March 2007
CC	Prof J C Cronje Jeannie Beukes

This ethical clearance certificate is issued subject to the following conditions:

1. A signed personal declaration of responsibility
2. If the research question changes significantly so as to alter the nature of the study, a new application for ethical clearance must be submitted
3. It remains the applicant's responsibility to ensure that all the necessary forms for permission and informed consent are kept for future queries.

Please quote the clearance number in all enquiries.

Appendix 2.1

Keyword relationships

Keyword relationships								
Underlying theories			Specific theories	Concepts	Aspect			
Complexity theory	Systems theory	Innovation theory	ICT integration	Beliefs	Student	Teacher	Organisation	
				Competencies				
				Access				
			Transformation	Policy	Alignment	Structure	Time	
				Leadership				
				Professional development				
			Inclusion	Cognition	Learning preferences	Learning styles	Differentiated learning	
				Diversity				
			Learning theory	Productive/ Generative learning	Student learning	Professional learning	Organisational learning	
				Active/experiential learning				
				Constructivism				
				Life-long learning				
			Community of Practice (CoP)	Collaborative learning	Student	Teacher	Organisation	
				Knowledge sharing				
				Organisational learning				
			Critical literacies	Information literacy	Thinking skills	Scaffolding	Resources	
				Verbal literacy				
				Visual literacy				
				Mathematical literacy				

Appendix 3.1

General Teacher Interview Questions June 2007

1. It is generally accepted (and has been shown by research) that high schools in particular are highly complex environments. As a high school [Wilding] is particularly complex. Changes in the school structure (the co-ordinate model), in the pastoral care system (the House/Tutor system) and in our approach to the classroom (the Inclusion policy) have all placed demands on teachers. On top of that we have the nationally mandated changes to an outcomes-based curriculum and new forms of assessment. How has all this impacted your classroom practices?
2. How have these innovations developed?
3. How have you worked together as a department to foster innovation?
4. In what ways have you been encouraged or supported by school leadership in fostering innovation?
5. Have there been external influences on your innovation processes and, if so, what are they?
6. Have you been involved in any partnerships or networks in developing innovations?
7. Why have some innovations been discontinued?
8. A further factor in that complexity has been the influence of the technological world and the 'knowledge age' that requires us to teach 21st Century skills and use ICTs in that process. In your department, what innovations involving ICTs have been significant to you and why?
9. How have these ICT related innovations come about? What factors sparked them?
10. In what ways have you been encouraged or supported by each other within your department in your development of ICT use in the curriculum?
11. Each learning area requires a different range of classroom strategies. Has your specialist area as a [subject] teacher influenced your approach to ICTs significantly and if so, in which ways?
12. Amongst the many changes that are happening at [Wilding], how would you rate the use or significance of ICTs?
13. In what ways have you been encouraged or supported by others beyond your department in your development of ICT use in the curriculum?
14. What constraints, if any, could you identify that might have hindered your ability to use or integrate ICTs in the classroom?

Appendix 3.2

General Leadership Interview Questions June 2007

15. It is generally accepted (and has been shown by research) that high schools in particular are highly complex environments. As a high school [Wilding College] is particularly complex. Changes in the school structure (the co-ordinate model), in the pastoral care system (the House/Tutor system) and in our approach to the classroom (the Inclusion policy) have all placed demands on teachers. On top of that we have the nationally mandated changes to an outcomes-based curriculum and new forms of assessment. How do you think all this impacts classroom practices?
16. What innovations are you aware of that have emerged from these classroom practices?
17. How have you seen departments working together to foster innovation?
18. In what ways are you able to encourage or support teachers in fostering innovation?
19. Have there been external influences on the innovation processes and, if so, what are they?
20. Are you aware of or have you been involved in any partnerships or networks in developing innovations?
21. Why have some innovations been discontinued?
22. ICTs are the information and communication technologies that we use such as PCs, network access, data projection facilities etc. You have been involved with the school for [X] years, of which this is your [XX] as [in a leadership role] with, inter alia, responsibility for ICTs [at Wilding]. During this period, what developments in the use of ICTs in the school have been significant to you and why?
23. Are there any particular innovations in ICT use [at the school] that you are aware of or would like to comment on?
24. In what ways have you encouraged teachers to develop their use of ICT in the curriculum and can you give examples?
25. Has your specialist area as a [subject] teacher influenced your approach to ICTs significantly and if so, in which ways?
26. What constraints, if any, could you identify that might have hindered the integration of ICTs in [the school]?

Appendix 4.1
Table of changes – external and internal

Type	Change	Cause	Effects	Date
Political & societal changes	Globalisation	Economic changes; technology development	All sectors especially education; ICT development	c.1995
	Change of government & new constitution	National change from apartheid to democracy	Affects every aspect of life	1994
	Provincial & municipal boundaries	Need for equitable distribution of resources	State & local government departments; restructuring of provincial education departments	post 1994
	Human rights	Entrenchment of rights of individual	Implications for rights culture and disciplinary matters in schools	1994
	Diversity, including employment equity	Equalisation of employment opportunities across race, gender and (dis)ability	Diversification of teacher and student populations; language factors	2000
	Skills shortage	Providing opportunities for all	Most sectors, especially teachers never exposed to good education systems	Ongoing
	HIV/AIDs factor	Ongoing social disintegration	Organisations and individuals; teachers, families and students	1984 -
	Proliferation of independent schools	Dissatisfaction with state education system	Leads to competition and need for marketing	1991 -
	Personal safety & security	Increasing crime rates and diminished effectiveness of police; first world/third world contrasts	Stress levels of individual teachers and students; theft and increase in security spending for schools	Ongoing
	Transport & time issues	Lack of public transport	Everyone; punctuality & travelling time	2004 -
	Services infrastructure	Lack of planning	Electricity supply	2007 -
Education policy changes	Curriculum 2005	Change from Christian National Education to democracy based curriculum	All grades, choice of subjects, language options, curriculum content	2003
	Outcomes based assessment	Assessment basis changes from marks orientation	Requires comprehensive change in teaching paradigm and practice	2002
		Memorisation	Applied knowledge, skills and values	
		Focus on teaching	Scaffold learning process	
		Assessment of learning	Assessment for learning	
	Inclusive philosophy	Recognition of rights and individual learning differences, including gifted learners, learning disabled and physically disabled learners	Learner-centred focus, learning styles, multiple intelligences; change in admission policy; classroom support; move away from streaming; support of individual needs.	2001
	Primary & 2nd language changes	Recognition of 11 official languages	Shortage of resources; change in subject structures from compulsory to optional	2003

Type	Change	Cause	Effects	Date
Education policy changes (continued)	New subjects & options (LO, EMS, Maths Lit)	Curriculum development at GETC & FET phases	Retraining; staffing numbers; provision of resources	2001
	Amalgamated subjects (HSS, NS)	Interdependence of knowledge	Staffing structures; subject choices; curriculum balance	2004
	Discontinued/private subjects (Latin, French)	Limited curriculum options	Re-deployment or retrenchment of teachers; private options	2004
	Alignment of content	Move away from western-based content	Move towards relevant South African and Afro-centric content	2003
	Examination board	Joint Matriculation Board to Independent Examinations Board	Closer compliance to national policy; new content; focus on assessment	c.2000
	School evaluation (Umalusi)	Replacement of critical inspection	Supportive evaluation; school as organisation as well as teaching practice	2007
School driven changes	Partnership	Co-ordinate a series of schools	Hierarchical structure; staffing structures; collegial relationships; gender-aligned content	1995 -
	Middle School	Alignment with curriculum phases; specialised phase for adolescent needs	Physical school structure; hierarchical structure; teachers to become middle school specialists; ethos of senior school	Discussed, agreed, not implemented
	Timetable changes & experiments	Accommodate complex changes	Teachers and students; time allocation to subjects and extra-murals	ongoing
	Community service	Social responsibility; leadership development; wider curriculum	Teachers on voluntary basis; all students; curriculum	c.2000
	Good to great	Assumption of 'good school'	Conscious move to 'great school'	2008
	Intern programme	Skills shortage; SETA support	Mentoring teachers; staffing structures	c.2002
	Retirement age	Lowered from 63 to 60	Shortage of experienced teachers	c.2000
	Class size	Increase costs	Teachers and students	c.2004
	Pastoral care (House & Tutor system)	Expansion of care system	Teacher workload & relationships with students	2000
	Leadership programme	Belief in concept of 'servant leadership'	Teacher workload & relationships with students	c.2002
	New subjects (Accounting, Design & Technology, Drama, Information Technology, Computer Applications Technology, Business Economics)	Stakeholder demand; new curriculum	Teaching ratios; demand on resources; broader subject option choices	2007
Technology driven changes	Proliferation of ICTs	Network, upgrades and updates (e.g. MS Office 2007); new applications	Retraining teachers & learners; updating systems & documents; maintenance & support	ongoing

Type	Change	Cause	Effects	Date
Technology driven changes (continued)	Plagiarism	Internet access; lack of access to databases; lack of information literacy skills; resource-based curriculum	Teachers and students; ethical practice	2000
	Administrative system	Data volume & integrity	Teacher training and access	c.1995
	Internet, Intranet & email access	Access to resources; communication	Information overload (especially email) for teachers and students	c.1995
	Integrated resource provision	Demand	Costs; maintenance; teachers and students	c.1993
	Web 2.0 & social networking; mobile technology; Multi-media	Student use & demand	Security; bandwidth; student focus on task	2004/5
Practice driven changes	Co-operative learning	All these changes have either a theoretical basis or they are driven by need i.e. student need or teacher need.	Affect teachers and students	1995
	Active learning			
	Peer tutoring c.f. teacher-centred teaching			
	Scaffolding learning			
	Non-streaming			2006
	Team teaching			
	Resource-based learning			2000
	Subject focus days (ex Middle School explorations)			c.2000 - 2005
	ICT integration			c.1994
	Moodle Learning management system			2007 -
	CASE (Maths & Science)			c.1998
	Video production			2005 -
	Intel course			c.2000, 2008

Appendix 6.1
Anti-plagiarism policy

Introduction

1. The College values academic integrity highly and therefore all teachers and learners must be made aware of the issues that undermine academic integrity and constitute plagiarism.

2. The College is committed to ensuring that all teachers and learners are responsible and ethical users of information. All teachers and learners will be guided in the appropriate use of information and ideas and the correct methods of acknowledging sources of information. Teachers and students will be held accountable for delivering honest work.

3. Emphasis should be placed on educating to avoid plagiarism rather than on punishing plagiarism.

Definition

4. Plagiarism is defined as the act of passing off someone else's words, ideas or creations as one's own whether deliberate or accidental.

Plagiarism Infringements

5. Plagiarism is committed when someone:
   - 5.1. Paraphrases from a source without proper acknowledgement
   - 5.2. Presents or uses the ideas, research findings, opinions, designs or creations of others as original work without acknowledging the creator(s) of the source
   - 5.3. Pieces together different pieces of information or ideas to form a whole from electronic (cutting and pasting) or from printed sources (copying) without proper acknowledgement
   - 5.4. Copies someone's words, ideas, illustrations or electronic files in any format from a source or sources such that very little of the resulting work is original, whether or not credit is given
   - 5.5. Copies someone's exact words without quotation marks and proper acknowledgement
   - 5.6. Changes words but not the sentence structure of the original without acknowledging the source
   - 5.7. Does not provide a list of references, commonly known as a bibliography
   - 5.8. Fabricates data or references
   - 5.9. Works on or completes an assignment for someone else, or collaborates with someone else on work that should have been done independently
   - 5.10. Obtains an assignment from another person, from a paper mill or from the Internet and submits it as one's own work

Prevention of Plagiarism

6. Teachers' Responsibilities:
   - 6.1. Avoiding plagiarism is ultimately the student's responsibility. However, teachers should design assignments to challenge student thinking and reasoning, to encourage creativity and to avoid plagiarism infringements

6.2. Teachers should place emphasis on developing good writing and research skills rather than punitive action
6.3. Teachers should make all learners aware of practices that constitute plagiarism and methods of avoiding it at the start of each research assignment
6.4. Teachers should make all learners aware of the ethical reasons for honest academic work and the consequences of committing plagiarism
6.5. Teachers should provide an assignment sheet with detailed instructions and a rubric outlining formative assessment as well as assessment of the final product
6.6. Teachers should provide clear guidelines on correct referencing and avoiding plagiarism
6.7. Teachers should provide clear guidelines regarding acceptable amounts of help from peers or adults

7. Learner Responsibilities:

7.1. Learners must uphold the College Charter by being ethical and honest in their work
7.2. Learners must demonstrate understanding by using their own words, sentence structures and ideas to synthesise the sources to which they refer
7.3. Learners must acknowledge the sources consulted and used in their work by creating a list of references
7.4. Learners in Grades 10 – 12 must demonstrate the depth and breadth of their research by using in-text references
7.5. Learners must sign every assignment and state on it that it is their own unaided work and that to the best of their knowledge, their referencing is correct

Consequences of Committing Plagiarism for Learners

The consequences for committing plagiarism are in accordance with the College's disciplinary policies.

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