

Chapter Three

Curriculum Content and Delivery: South African LIS Education Responses to a Changing Information Landscape

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Introduction

In a highly networked 21st century digital information landscape, Library and/or Information Science (LIS) education carries the responsibility of producing graduates who are able to effectively mediate this dynamic environment. Rapidly evolving information and communication technologies (ICTs) have dramatically transformed library and information services, particularly in the higher education environment where it has led to a revolution in scholarly communication (Riley-Huff & Rholes, 2011; Goetsch, 2008). This in turn has impacted on the knowledge and skills requirements of professionals practising in the information environment. Hence LIS curriculum content and delivery need to respond appropriately to the knowledge and skills demands of this changing information landscape. This paper, taking a mixed-methods research approach, uses qualitative and quantitative data gleaned from relevant literature, an email questionnaire survey of LIS school heads in South Africa coupled with an appraisal of the websites of these schools, and content analysis of recent relevant job advertisements, to address the following critical question: How has LIS education in South Africa responded to the dynamic information landscape? Using what is referred to as heutagogical teaching and learning theory (Hase & Kenyon, 2000), this paper focuses on South African LIS schools' curriculum content and delivery responses to a fast evolving information environment. The outcome of this in-

quiry, it is hoped, will highlight critical issues relating to LIS education in South Africa in an information age impacted on by rapid technology developments.

Theoretical framing

It is common knowledge that the use of ICTs has changed higher education pedagogy. Examples include: the adoption of online learning or e-learning using Web 2.0/3.0 interactive technology, blended delivery of instruction (combination of online and face-to-face learning), synchronous and asynchronous communication, virtual use of audio-visual media as well as text, educational resources being freely available via the Internet (OERs) and the seamless access to information resources for educational purposes via open journal publishing and institutional repositories - with much of this being mediated via mobile devices such as smartphones and tablets. In such an environment of constant change, virtual engagement, and a high degree of mobility and flexibility, what is taught (content) and how it is taught (delivery) become critical. Hase and Kenyon (2000) found that traditional teacher-centered methods and practices of teaching (pedagogy - for example in primary and secondary schools) and adult student-centered teaching (andragogy - for example, in higher education) were not entirely satisfactory in meeting the learning needs in contemporary 21st century society in which "information is readily and easily accessible". Hence they built on existing humanistic theory to formulate the heutagogy teaching

and learning theory which will be more suitable to the digital information environment as it focuses on self-determined or self-directed learning (Hase and Kenyon, 2000). For Hase and Kenyon (2007) the “unpredictability and turbulence of the [digital] environment” required a heutagogical approach to education to develop “capable” individuals who have high self-efficacy, know how to learn, are creative, have the ability to use competencies in familiar as well as in new situations, and work well collaboratively (Myburgh & Tammaro, 2013: 223).

According to Myburgh and Tammaro (2013: 225) “heutagogical approaches place the ultimate responsibility for learning on the learner, who must develop self-directive competencies” and hence the usefulness of this approach to “methods of educating information professionals”. Such self-directed learning is “dependent to a large extent on information – connecting with others and sharing ideas, discovering and sharing information, and collecting and making meaning of information” (Myburgh & Tammaro, 2013: 225). The use of ICTs, explained Myburgh and Tammaro (2013: 227), supports the heutagogical approach because it facilitates learner generated content (e.g. blogs, wikis, websites, Facebook annotations, and Twitter notes), active engagement in the learning process, group interactions and reflective practice. The heutagogical approach is also closely associated with critical pedagogy and constructivist approaches to learning, both of which encourage learners to view the world critically and to build their own meaning of the world drawing from their experiences and engagements with reality. The latter learning approaches, claimed Walster (1995: 247), lent themselves to LIS education in the 1990s as they were well suited to learning environments involving “online instruction, interactive environments, electronic access, and electronic training...” which emerged during this time. The characteristics of these approaches to teaching and learning in which contemporary context and sense making by learners themselves are central, are used in

this paper to ascertain South African LIS education responses (in terms of curriculum content and delivery) to a changing information landscape.

Review of selected literature

“That technology has wrought tremendous changessome will even claim...havoc...in the [LIS] professional and educational domain alike, will not be denied by many”, claimed De Bruyn (2007: 111). Erdman (2008: 94) made reference to a “field [that is, LIS] where the line between librarian and computer tech is blurred more and more”. Hence the re-defining of LIS jobs and the emergence of new job titles such as ‘Digital Strategies Librarian’, ‘Digital Technologies Librarian’ and ‘Teaching and Learning Librarian’ (*Redefining LIS jobs*, 2007). Accordingly, LIS education course content the world over began to show evidence of increasing infusion of ICTs as well as a broadening of curricula in response to “broader information environments that transcended traditional libraries” (Ankem, 2010: 214-215). To support this broadening of the scope of their teaching offerings some LIS schools entered into “strategic alliances” with other academic disciplines so as to draw on their knowledge and expertise or hired teaching staff from other disciplines (Ankem, 2010: 215) such as Computer Science, Information Technology, Information Systems, Software Engineering. Raju (2013: 250) reported that LIS schools have come to “include the ‘I’ word or to even omit the ‘L’ word to embrace diversification caused by evolving...ICTs”. And more recently, some LIS schools have chosen a more distinct paradigm shift to become iSchools which focus on embracing the issues, opportunities and challenges of the information age (Bonnici, Subramaniam & Burnett, 2009: 264) generally and not libraries per se. On the whole, the picture is one of a highly turbulent environment, both educationally and professionally.

The broadening or diversification of the LIS curriculum in response to the impact of evolving ICTs on the information landscape, brings with it the challenges of defining the core LIS curriculum

to meet the demands of the modern information workplace. IFLA (International Federation of Library Associations and Institutions), in its 2012 revisions to the *Guidelines for Professional Library/Information Educational Programs* (IFLA, 2012: 2), remarked not only on the need to accommodate the “Internet and other digital technologies” into the core of LIS education but also obliquely referred to the blurring of boundaries between LIS and related disciplines (alluded to earlier), indicating the diffuse and diverse nature of the evolving information landscape – and hence the challenge of pinning down an educational core.

Miller (2007: 203) questioned, in the context of the need for LIS professionals in the current digital age, to “understand and help to augment” the teaching and learning process [particularly in higher education], whether new LIS graduates have the required knowledge and skills to “meet the demands of this new era of information access and learning”. Hence in his study, Miller (2007: 203) called for “a need to recalibrate the LIS core curriculum”. He usefully pointed out that despite LIS “competing with other [information related] disciplines, it still held the professional corner” when it comes to teaching people to be efficient and effective in their search for information (particularly in the complex digital terrain). Hence Miller (2007: 206) argued for not just the inclusion of technology knowledge and skills in the LIS core curriculum, but, very importantly, pedagogical knowledge and skills as well. Technology has shifted the focus from the intermediary activities of librarians (e.g. reference work) to empowering the end-user to effectively and efficiently navigate the complex digital information terrain (Riley-Huff & Rholes, 2011: 131). Hence the need on the part of academic librarians for understanding of pedagogy and instructional design theory and practice (Miller, 2007: 207) which has not, traditionally, been part of the education and training of LIS professionals.

Miller (2007: 213-215) recommended that LIS

education should look to the discipline of Educational Technology to strengthen its core curriculum with the inclusion of teaching and learning for librarians. In proposing a “course template” including both technology and pedagogy for librarians, he interestingly added teaching and learning theory relating to curriculum delivery, for example, distance education and learning management systems, and explained that his proposed course would be delivered to students in a “hybrid (that is, blended – combination of face-to-face and online learning) environment” using “course management software” that may “be easily adapted to be offered totally as an online course”. Innovative curriculum content delivery (blended or online formats) has much relevance for LIS education in the current digital age as it presents opportunities for it to reach a wider audience of students and here again, LIS education would need to reach out to other disciplines, such as Educational Technology, to manage this form of content delivery with efficiency. Mezick and Koenig (2008: 604) made the useful observation that with virtual delivery of curriculum content, “learning is reinforced because the medium of delivery is also the subject matter” in that LIS students “utilize the very systems that they will be using in the workplace”; the virtual learning environment allowed students “to learn from the environment as well as from the content of the course”. It is also transformative in that it allows both students and educators to become more online-focused in an e-learning higher education environment.

Raju (2014: 169), in a study of the knowledge and skills required for LIS professionals to effectively mediate a digital era academic library, concluded that a “blend of discipline-specific knowledge, generic skills (general skills that apply to all disciplines e.g. problem solving) and personal competencies (attitudes, values and personal traits)” was required. Hence it is the responsibility of LIS educational programmes to strengthen these various skills sets. Discipline-specific knowledge would always remain at the

core of LIS education. However, Bronstein (2007: 74) pointed out that personal competencies, which she referred to as “personal or social skills”, are difficult to identify and measure. Nonetheless, she posited that it was important for LIS programmes to develop areas of study that focus on developing students’ social skills as such skills (e.g. interpersonal skills, teamwork, ability to respond to the needs of others) are required to strengthen a user-centered approach to information work. This assertion is particularly important in view of the fact that technology, specifically the Internet, has led to the democratization of access to information (De Bruyn, 2007: 109), whereby the focus has shifted from the information professional as the intermediary to the end-user of information. Hence the importance of a user-centered approach to information work which requires well developed social skills on the part of LIS professionals.

This review of selected literature highlights trends relating to the impact of rapidly evolving technology on the LIS workplace, particularly in the higher education environment, and the implications of resulting workplace skills and competency requirements for the depth and breadth of LIS curriculum content as well as its delivery to students preparing for professional participation in a dynamic information environment.

Empirical component

The characteristic features of Hase and Kenyon’s (2000; 2007) heutagogical teaching and learning theory which more appropriately addressed the learning needs for a digital information environment, together with learning requirements for such an environment identified from the literature reviewed, were used to identify trends from a 2014 email questionnaire survey of LIS school heads (HoDs) in South Africa (around issues of new themes taught, curriculum delivery modes and staff expertise using open-ended questions) as well as from content analysis of the websites of these nine LIS Schools which were currently operational. Data extracted from these empirical sources, as evidence of current

curriculum content and delivery in LIS education in South Africa, were also juxtaposed against knowledge and skills requirements extracted through content analysis of the job requirements in 2014 job advertisements emanating from the academic library sector which seems to be the most affected by rapidly evolving ICTs. The juxtaposition was to ascertain whether LIS education in South Africa was speaking to the knowledge and skills needs of the digital information environment.

Content analysis of job advertisements is a well-established method of ascertaining requirements of the employment market (Orme, 2008: 620, 623; Ocholla & Shongwe, 2013: 35). The learning needs for a changing digitally oriented information environment identified in the literature were populated on a chart (see Table 1) and frequency counts of these were recorded in the columns representing LIS schools (HoDs’ responses and website analyses) and job advertisement requirements. It was considered useful to combine LIS school HoDs’ responses and website analyses as together these two sources of data represented the positions of the individual LIS schools in the areas being probed.

This mixed methods approach was useful in “drawing on both qualitative and quantitative research” for a “more complete understanding” of the research problem (Creswell, 2014: 218) articulated in the question: How has LIS education in South Africa responded to the dynamic information landscape? The LIS schools surveyed were those from the Universities of Fort Hare, Cape Town, KwaZulu-Natal, South Africa, Limpopo, Zululand, Pretoria, Western Cape and the Durban University of Technology (nine currently active LIS schools in South Africa. There was no response from Walter Sisulu University or an active LIS school website for it. Thirty (30) academic library professional level job advertisements were analysed; these were systematically collected during 2014 from the weekly *Mail & Guardian* newspaper (a popular source of advertise-

ments in the higher education sector in South Africa) as well as from the online source *LiasaOnline* (listserv of the LIS professional body in South Africa) and related online lists to allow for the current trend in the digital environment where organisations choose to advertise jobs online only (Reeves & Hahn, 2010: 118), largely to cut costs. Table 1 presents the analysis of data in a “mixed methods data analysis” form which involved “the mixing of two forms of data [qualitative and quantitative] concurrently and sequentially in a single project” (Creswell & Plano Clark, 2011: 212).

Discussion of findings

It is clear from Table 1 that, in terms of discipline-specific knowledge or what is referred to as professional knowledge, there is 100% correlation between presence of this in the curriculum content of all nine LIS schools and the requirements of the workplace, in the case of the academic library sector. The same is evident (see Table 1) for relevant technology infusion into LIS curricula in South Africa – the literature reports (Ankem, 2010: 214-215) that LIS schools the world over (and South Africa is not any different) have increasingly infused ICTs into their curricula in response to the impact of evolving technology on the LIS professional domain. However, within the South African LIS educational domain not all nine schools have introduced new curriculum themes and relevant technology skills at the same pace in response to the changing information landscape. For example, one LIS school HoD admitted, in some instances, to “lagging behind international changes to the information landscape”, while other schools seem to have pushed ahead since 2010 with new offerings in areas such as Research Librarianship, Digital Curation, and Content Management Systems and Repositories, covering topics such as the Open Movement (open access, open content e.g. OERs, open data, etc.), HTML and XML, RDA and Dublin Core, Online AACR2 and Online Dewey, and Virtual Reference.

In terms of curriculum delivery, all nine LIS schools (according to the heads surveyed) have,

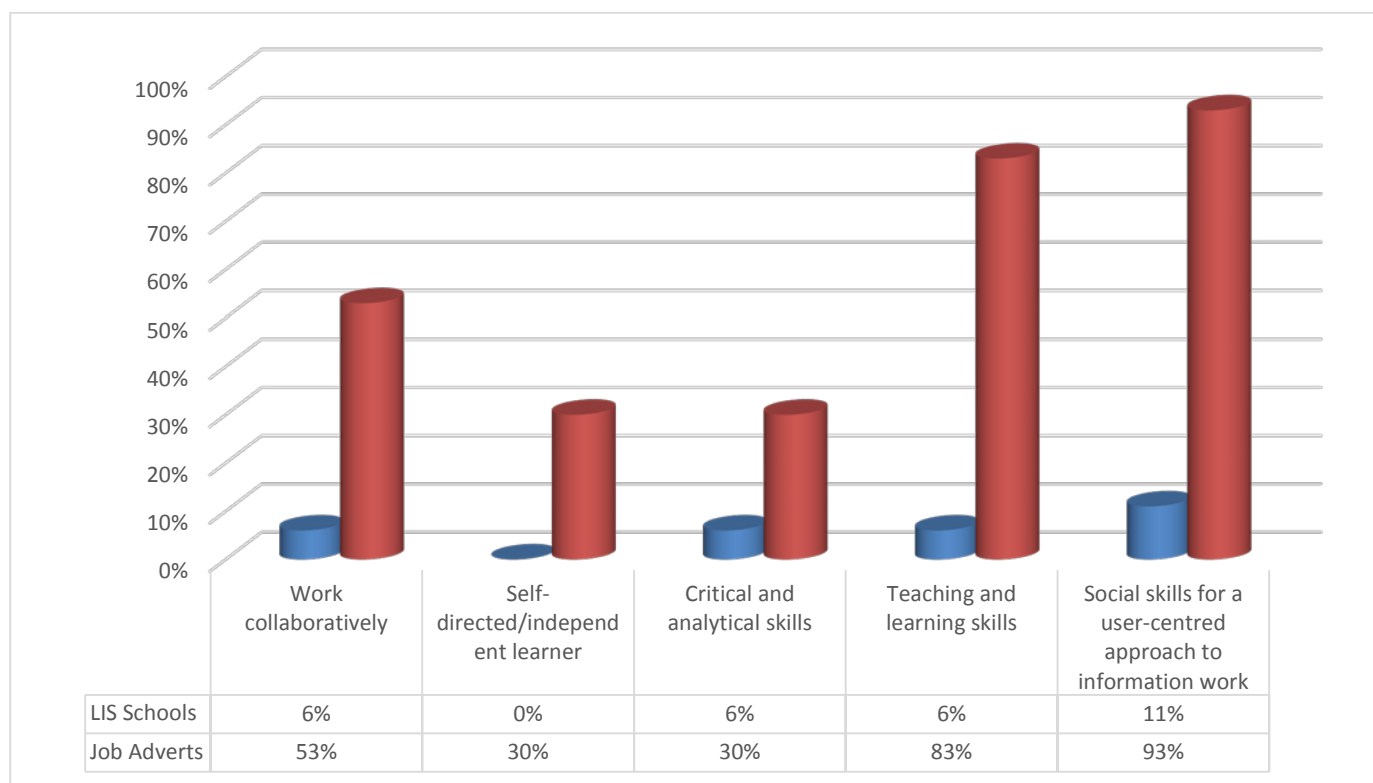
in one way or another, exploited available technology to embark on new curriculum delivery methods to reach a wider audience of learners. These include, Blackboard, Moodle, Videoconferencing, Vula (institution specific and Sakai supported) coupled with ‘block release’ student registrations, blogs, online discussion forums, social media (Facebook and Twitter) and blended delivery (combination of face-to-face and online learning). While some schools’ websites were very detailed and up-to-date, others were not as current and comprehensive - this could probably explain why Table 1 reflects only a 61% presence for online delivery modes despite the 100% response on this issue from LIS HoDs. Academic libraries, strangely, in their job advertisements do not seem to be interested in online instruction skills despite a significant 83% interest (see Table 1 and Figure 1) in hiring professionals with some teaching/instruction skills and the literature (Mezick & Koenig, 2008: 604) emphasizing the value of online learning in teaching users how to access information. While one or two LIS school heads claimed that it is still early days and they are “still experimenting” and hence success of curriculum delivery via new delivery methods is difficult to ascertain, most of the nine schools were satisfied with their new delivery methods with some commenting that both students and academics enjoyed the flexibility it offered and the “ease at which [sic] data can be updated and the quick feedback [that is possible]”. In fact Hase and Kenyon (2000; 2007) observed that it is precisely for these reasons that online learning is so conducive to self-generated learning which is core to heutagogical education.

Regarding main challenges relating to delivery of new curriculum content in the current digital age, LIS school HoDs listed a variety of issues, including Internet access difficulties, meeting the learning needs of a diverse cohort of students, competition from “cognate institutions”, variations in students’ digital literacies, diversity of delivery technologies, attracting students to the programme, and inertia on the part of especially

Table 1: Indications of heutagogical approaches to education in South African LIS Schools

Learning needs for the changing digitally oriented information environment to produce “capable” individuals (Hase & Kenyon 2000; 2007) for this environment	LIS Schools (HoDs’ responses & website analyses)		Job advertisement requirements	
	<i>Frequency</i>	<i>% age</i>	<i>Frequency</i>	<i>% age</i>
High rate of self-efficacy	-	0%	2	7%
Know how to learn	-	0%	-	0%
To be creative	-	0%	7	23%
To be able to use competencies in familiar and new situations	-	0%	4	13%
To be able to work well collaboratively	1	6%	16	53%
To be a self-directed/independent learner	-	0%	9	30%
Make meaning of information in its context/construct knowledge using own experiences	1	6%	1	3%
Engage in reflective practice	-	0%	-	0%
To be critical and analytical	1	6%	9	30%
Have discipline-specific/professional knowledge and skills	18	100%	30	100%
To be technology (ICTs) proficient	18	100%	30	100%
To be skilled for the broader information environment (and not just traditional libraries)	17	94%	-	0%
Have teaching and learning (pedagogical) skills to instruct others on accessing information	1	6%	25	83%
To be able to teach and learn via online instruction using learning management systems/software	11	61%	-	0%
Social skills for a user-centred approach to information work (client/learner focus, communication skills, interpersonal skills, etc.)	2	11%	28	93%
TOTAL	9 + 9 (18)	100%	30	100%

Figure 1: Selected learning needs: LIS Schools and Job advertisement requirements – comparison



older academics to embrace new knowledge and new technologies relevant to the LIS discipline. These are understandable and anticipated issues, many of which require medium to long-term institutional responses.

In view of the diversification of LIS curricula, globally, to en-skill graduates for a broader information market, as articulated in the literature (Ankem, 2010: 214-215) as well as by LIS schools in South Africa (see the 94% presence of this trend in Table 1), it is surprising that the majority of these schools (according to the HoDs surveyed), if they did make any new appointments in the last five years, did so from among LIS generalists. There were just one or two cases of an appointment of a LIS or IS (Information Science) academic with specialist expertise in Information Technology or Knowledge Management or Archive and Records Management. There were only three schools who made appointments in the last five years from disciplines outside of L/IS, and these have been from cognate disciplines such as Computer Science, Enterprise Content Management/Digital Curation, Law, Education, and Agricultural Information Systems. Perhaps this will

grow in the future to join the international trend reflected in the literature (Ankem, 2010: 215) where it is not uncommon to find LIS schools broadening their focus through “strategic alliances” with other cognate disciplines or hiring of staff from these disciplines. This not only addresses viability and diversification issues but also promotes interdisciplinarity which is much valued in higher education teaching and research. That Table 1 reflects a nil score in this learning area for employer requirements as opposed to 94% on the part of LIS schools is not necessarily anomalous, as it is the responsibility of LIS schools to ensure the employability of their graduates by broadening their skills base; that is, this forward thinking role sits with the education sector rather than with the employment sector.

It is evident in Table 1 that heutagogical education places more emphasis on generic skills compared to discipline-specific knowledge and skills, a point re-iterated by Hase and Kenyon (2000) when they explained that in a 21st century world where “information is readily and easily accessible” and where “change is so rapid”, disci-

pline-based knowledge does not adequately prepare one “for living in modern communities and workplaces”; that “modern organisational structures require flexible learning practices”. Hence one finds the dominance of generic skills in heutagogical education (see Table 1). It is interesting to observe in Table 1 that, in almost all of these generic learning areas, South African LIS schools have a very meagre showing. One may argue that much of this skills training is embedded in the curriculum and hence not overtly visible via LIS schools’ websites and curriculum outlines. The proponents of heutagogical education may argue then that this lack of visibility may also be interpreted as a lack of emphasis on these critical learning areas as opposed to the prominence given to discipline-based knowledge and skills.

Figure 1, in the form of a bar graph, highlights six of these generic learning areas from Table 1 to draw attention to the fact that despite demands from the employment sector (in this case academic libraries) for these generic skills needs, evidence from LIS schools seem to indicate an under-performance in these areas. A worrying revelation in this illustration (Figure 1) is the 83% demand in job advertisements for teaching and learning (pedagogical) skills and a mere 6% showing from the LIS schools. This is an area, particularly, that needs immediate attention on the part of LIS schools as the literature (for example, Miller, 2007: 207) is vocal about the need for information professionals to understand pedagogy and instructional design and theory to be able to empower the end-user to learn to navigate the complex digital information terrain to contribute to him/her becoming a self-directed and independent learner. A further area of concern is that of social skills for a user-centered approach to information work (see Figure 1) where, again, LIS schools fall far short of employer requirements. The literature (for example, De Bruyn, 2007: 107) explains that technology, particularly the Internet, has shifted the focus from the information

professional as the intermediary to the end-user of information. For this reason social skills such as user/client-centered orientation, become critical.

Conclusion

This paper addressed the question: How has LIS education in South Africa responded to the dynamic information landscape? It focused on LIS education in terms of curriculum content and delivery and in doing so framed the enquiry using a heutagogical approach to education which is deemed appropriate to educational preparation for a changing and highly digitised information landscape of the 21st century because of its focus on current context and the centrality of the learner in directing his/her own learning. Such an analysis, using a mixed methods research approach for data collection from relevant literature, LIS schools and relevant job advertisements revealed that while LIS schools in South Africa are on the whole doing well in the current digital information context in terms of discipline-specific/professional knowledge and skills (including technology imperatives) *vis-à-vis* employer requirements, they have not come off well in the generic learning areas which, according to Hase and Kenyon (2000; 2007: 112), are critical to producing “capable” people for “capable” organisations. Amongst these deficiencies, two learning needs that require urgent attention by LIS schools in South Africa are those associated with 1) teaching and learning skills for information professionals, which traditionally have not been part of the education and training of information professionals; and, 2) social skills for a user-centered approach to information work, especially in the context of the “democratisation of access” to information made possible by technology and the resulting “emancipation” of the end-user of information (De Bruyn, 2007: 109) that is so vividly expounded in the literature.

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