

Lefa la Tsebo: A Proposed Model for Framing Tshwane University of Technology's Libraries Policies

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Abstract

This article presents a proposed model for framing the policies of Tshwane University of Technology's (TUT) libraries. The authors draw on a focused literature review across various disciplines as well as empirical evidence collected from a purposive sample of 40 participants in a case study. The qualitative evaluation method is used to evaluate a set of models. A self-developed set of criteria is used as a tool to test the models towards a selection of elements and features that are then used to table the proposed model for TUT's libraries. The evaluated models were categorised to produce models for academic library activities, models for higher education as well as models that depict changes in society's knowledge system. The adapted model proposes a multiple reality constructionist approach to improve a shared understanding of what constitutes knowledge in democratic South Africa. It was found that there are inconsistencies and a lack of clarity on the role of TUT's libraries in transformation initiatives of the university. The main argument is that the future role of TUT's libraries should include taking part in other processes of the knowledge system such as knowledge production, application and use. The main value of the article is to provide a comprehensive strategic outlook that guides the transformation of TUT's libraries. This will assist to frame TUT's libraries policies in light of changes taking place in higher education.

Keywords: proposed model; academic libraries; knowledge production; knowledge application; triple helix; national innovation system

Introduction

Academic libraries traditionally support universities in their teaching, learning, and research activities. Their support functions can be broadly defined in terms of the organisation and storage of recorded knowledge, as well as its distribution and access to it. According to Dick (1982), the functions of academic libraries can be seen as elements contained within a larger system referred to as the knowledge system in society.

Dick (1982, 17) posits that “the knowledge system in society may be construed as a model consisting of knowledge production, knowledge organization and storage, knowledge distribution and accessing as well as knowledge application or use” (see also, among others, Holzner and Marx 1979; Machlup 1962). He further states that academic libraries do not focus on elements of knowledge production and application or use, even though these have a direct link to the core functions of academic libraries. This oversight in terms of the related processes of society’s knowledge system problematises the role and responsibility of academic libraries in society and their response to social conflict.

The functions of TUT’s libraries have been tested empirically to confirm the oversight of other functions relevant to society’s knowledge system (i.e. knowledge production and application or use). Importantly, the analysis indicates that the relationship between the elements of knowledge production, organisation and storage, distribution as well as application can be traced back to the early relationship between academic and research libraries (see Molepo 2018).

The main argument in this article is that the future role of TUT’s libraries should include taking part in other processes of the knowledge system such as knowledge production, application and use. This can assist to strengthen the overlay of communications between the university-academic library-community helices towards the political, cultural and socio-economic emancipation and development of local indigenous African communities. This article discusses the rationale, methodology and self-developed criteria used in tabling a proposed model for framing TUT’s libraries policies. It also briefly discusses the findings of a case study on TUT’s libraries. A proposed model for framing TUT’s libraries policies is tabled.

Rationale

The context of TUT’s libraries can be better understood by looking at the historical relationship academic libraries have with research libraries.

The Historical Relationship between Academic Libraries and Research Libraries

The connection between academic libraries and research libraries can be traced back to the earliest development of university libraries among European nations (i.e. Germany

and Britain). This is not to say that this was not the case in other nations of the world. Most of the literature available on the connection between academic libraries and research libraries is written in English, which is the most accessible to the authors. According to Tidmarsh (cited in Saunders 1968), seminar libraries in German universities influenced some librarians in European nations to set up departmental libraries opposite large research collections. The phenomenon of specialisation in academic and research/special libraries began in the US, swept across the world and was later adopted by other nations of the world. The connection between academic libraries and research libraries gained momentum during and after World War II when the need for research and development in specialised disciplines such as mathematics and engineering was emphasised (Kent and Lancour 1968).

In South Africa, the historical connection between academic libraries and research libraries is overshadowed by the current context and functions of academic libraries. For instance, current recommendations by academic staff members to TUT's libraries for collection development purposes focus more on the inclusion of discipline specific textbooks for students and less on leading journals, treaties, reference books and transactions of learned societies. A continuation of such recommendations will not assist TUT libraries' transformation.

Transformation Initiatives at TUT

After the 2015 and 2016 student protests, there have been numerous debates and discussions about transformation in the South African higher education sector. At the centre of these debates and discussions is the call for the "decolonisation" and "Africanisation" of the university and its curriculum. As a result, universities across the country have been engaged in the process of formulating new strategies. For instance, TUT organised and hosted a transformation summit in 2017. This was followed by the drafting and publishing of a transformation framework.

The Library and Information Services (LIS) directorate then initiated a separate transformation summit following the publication of the *TUT Transformation Framework 2017* (TUT 2018). This summit, entitled "New Trends and Technologies: The Future and Beyond," was held on the 28th of June 2018. The LIS transformation summit motivated library and information services researchers to reimagine TUT's libraries (McCallum 2017). The summit drew on a knowledge society approach but did not analyse TUT's place and role in society's knowledge system (Molepo 2018, 41). Researchers who focus on the information and knowledge society approach in LIS neglect the wider context of a knowledge system, and therefore deal with the concepts at a basic level.

Furthermore, the lack of content addressing TUT libraries' role in terms of the discourse of "decolonisation" and "Africanisation" in the draft and final transformation framework is problematic. On the one hand, it provides some insight into the

contribution of the Library and Information Services community at TUT in as far as the transformation agenda is concerned. On the other hand, it reveals a consistent pattern of neglect of TUT's libraries in transformation discussions by strategic planners and advisors of TUT. The lack of clarity on the role of TUT's libraries in the transformation agenda of the university and the hosting of a separate transformation summit reveal a pattern of inconsistency. There is a need for the tabling of a comprehensive strategic outlook that guides the transformation of TUT's libraries going forward (Molepo 2018, 40–41).

Methodology

The authors draw on a focused literature review across various disciplines and empirical evidence collected from a purposive sample of 40 participants in a case study by Molepo (2018). The qualitative evaluation method is used to evaluate a set of models: models for academic library activities (see Baglier and Caswel 2016; Dongardive 2013; Joint 2011; Mehler and Waltinger 2009; Sigwald 2016), models for higher education (see Hay and Van Gensen 2008; Van Zijl , Gericke, and Machet 2006; White 2017), as well as models depicting changes in society's knowledge system (see Etzkowitz and Leydesdorff 1995; 1997; 2000; Funtowicz and Ravetz 1993; Gibbons et al. 1994; Lundvall 2005; Schafer 1983; Slaughter and Rhoades 2004), and Dick's (1982) model of society's knowledge system, which builds on the earlier work of Machlup (1962), Holzner and Marx (1979) and others. A self-developed set of criteria is used as a tool to test the models towards a selection of elements and features that are then used to table the proposed model for TUT's libraries.

Criteria Used to Table Proposed Model for TUT's Libraries

According to Paterson (2017), a strong relationship between the government and academia can assist in thwarting the derailment of national policies by foreign donors. The assertion made by German social scientists, Susanne Koch and Peter Weingart (cited in Paterson 2017), on the influential role played by foreign donors on national policy regimes has relevance for this article.

The criteria corroborate the emphasis placed on universities and their libraries as critical partners in building the sovereignty of a country. According to Molepo (2018, 72), "emphasis on the important role played by epistemic communities within universities and their libraries is necessary for an ideal South African knowledge society." The following is a list of the self-developed criteria:

- Introduce the Library Project to the TUT transformation agenda.
- Position academia as a leader in innovation.
- Assist in understanding the history of the structural reforms in higher education, especially with regard to universities of technology.

- Show the relevance to identifiable academic library activity affected by change.
- Affirm the role management must play in dealing with change.
- Allow academic libraries to reconsider non-traditional processes such as knowledge production, application or use.
- Be realistic and flexible to adapt to smaller academic libraries.
- Acknowledge academic libraries as diverse cultural organisations within a broader societal context.
- Advocate for the sustainable development of academic libraries taking into consideration the United Nations' Millennium Sustainable Development Goals.
- Identify technological advancements as the main drivers of change.
- Espouse a learner/user centred approach.
- Amplify the role of the academic library in research and scholarly communication.
- Emphasise skills development and lifelong learning of the academic library workforce.
- Corroborate the notion of business development within TUT libraries in partnership with local indigenous African communities.

According to Schafer (1983), “the manner in which the social forming of theories is exercised has shifted from linguistic patterns and metaphors to the perception of what constitutes a scientific problem and the establishment of criteria for solving them.” The criteria were put together taking into consideration current challenges faced by TUT and its libraries. Its intention is to assist in creating an adapted/refined model that could be useful for framing TUT’s libraries policy going forward.

Findings

More than 30 per cent of the participants described TUT libraries’ engagement with the discourse on “Africanisation” and “decolonisation” in higher education as extremely clear (see Figure 1). However, this finding is ambiguous since the authors could not find any document that describes TUT libraries’ engagement with the discourse on “Africanisation” and “decolonisation” in higher education. The authors can only speculate that this finding reflects the general perception that TUT’s libraries should remain passive in spite of the changes taking place in higher education (refer to Figure 1).

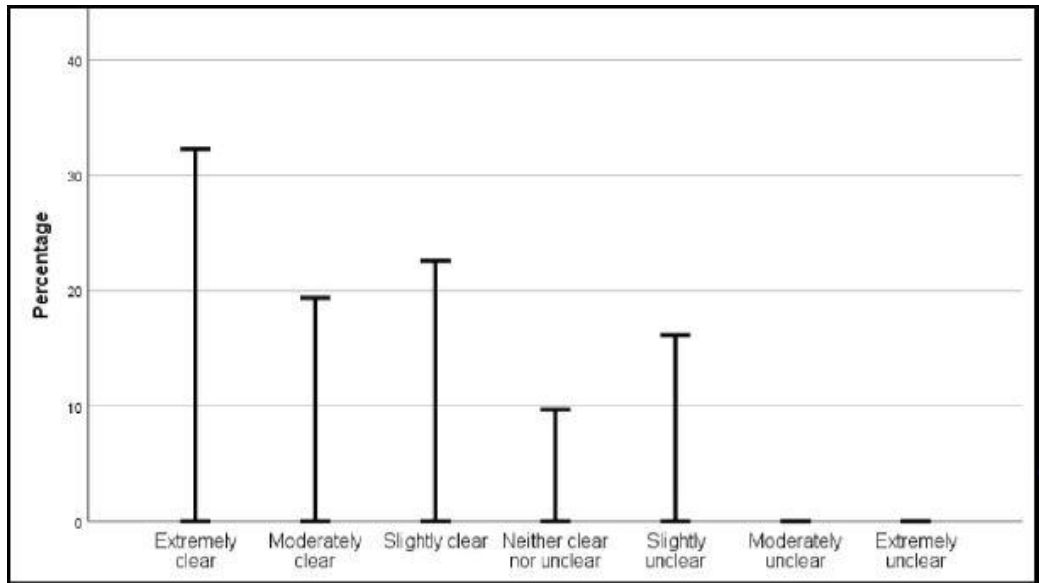


Figure 1: Engagement of TUT’s libraries with “decolonisation” and “Africanisation” discourse

The proposed model for framing TUT’s libraries policies can assist in facilitating the transformation of TUT’s libraries in line with the ideals of the recently published transformation framework of the university and changes taking place in higher education. It can also assist to strengthen the overlay of communications between the helices of university-academic library-community towards the political, cultural and socio-economic emancipation and development of local indigenous African communities.

The Proposed Model for TUT’s Libraries in order to Frame TUT’s Libraries Policies

The conceptual framework for the adapted model is the theory of the sociology of knowledge, a branch of classical sociology introduced by thinkers such as Holzner and Marx (1979). The proposed model is an adaptation of the model of society’s knowledge system. It also builds on the early work by Schutz (1946) and Dick (1982). It symbolically uses the shape of the indigenous board game *morabaraba* to provide a local context.

Symbolic Use of the Indigenous Board Game *Morabaraba*

The top half of the proposed model takes the shape of an indigenous board game called *morabaraba*. *Morabaraba* is a traditional strategy board game played in South Africa, Botswana and Lesotho. While the game has been likened to the Roman board game Nine Men’s Morris, it is claimed that *morabaraba* boards carved in rock are dated to be

at least 800 years old, which would exclude a European origin. It is popularly played by rural Southern African youth who refer to the counters used in the game as “cows.” *Morabaraba* is not only a two-player game since the two players can have an additional one or two people playing the role of “adviser” or “partner” during the game.

According to Nkopodi and Mosimege (2009), the game was found “to promote spontaneous interaction amongst learners as they communicate their activities to fellow participants in mathematics classrooms.” Similarly, the symbolic use of the board in the proposed model may promote interactions and communications that take place between the helices of the university, academic library, community, state and private industry. In addition, the symbolic use of the indigenous board game is meant to emphasise the importance of “strategy” and “cows” in the implementation of the proposed model. Strategy may inform policy direction, while “cows” may refer to the human and intellectual capacity (i.e. a multiple constructionist approach) needed to implement the proposed model.

A Multiple Constructionist Approach

The adapted model proposes a multiple constructionist approach to improve a shared understanding of what constitutes knowledge in democratic South Africa. South Africa’s early colonial missionary printing and publishing influences, including those of the British colonial and apartheid eras, all contributed to shaping modern contemporary South Africa and therefore its knowledge system.

The addition of democratic South Africa to the colonial past, which includes the meaning attached to knowledge by previously marginalised racial groups (i.e. blacks), is indicative of the multiple realities that are currently competing for truth and legitimacy. The student disruptions of 2015 and 2016 are one example of this. These taken-for-granted multiple realities can be seen to represent distinctive knowledge societies that seek truth and legitimacy through language and communication. Based largely on the work of Holzner and Marx (1979), Dick (1982) and others, the adapted model emphasises the importance of the discourse of language and communication by drawing inspiration from the work of Foucault (1980).

Discourse on the “Africanisation” and “decolonisation” of universities among various role players including students, academics, politicians, the private sector as well as civil society is central to the proposed model. There is a general agreement among these role players that a discourse on “Africanisation” and “decolonisation” is long overdue (Le Grange 2016). The discursive use of the terms “Africanisation” and “decolonisation” requires a turn to scientific discourse in order to assign meaning within the confines of the laws of the state and institutionalised power (i.e. university libraries). Thus “Africanisation” and “decolonisation” can be formally construed as the epistemological legitimisation of indigenous knowledge in the context of this article. A very good source and an example of decolonisation is Dick’s (2013) critique of the socio-cultural bias of

the cognitive approach used in Ingwersen and Järvelin's (2005) nested model of context stratification for information seeking and retrieval.

In order to legitimise the African indigenous knowledge system among the existing modern knowledge system of contemporary South Africa, the proposed model can be called *Lefa la Tsebo* (see Figure 2). *Lefa la Tsebo* is a Northern Sotho/Pedi phrase meaning "heritage of knowledge." It can be translated into other local indigenous languages without loss of meaning. The use of local languages for the proposed model is meant to emphasise the inclusion of local epistemologies as scientific discourse within the more Westernised, Anglo-Saxon and Afrikaner-influenced South African knowledge system.

The Proposed Model May Be Characterised as Follows:

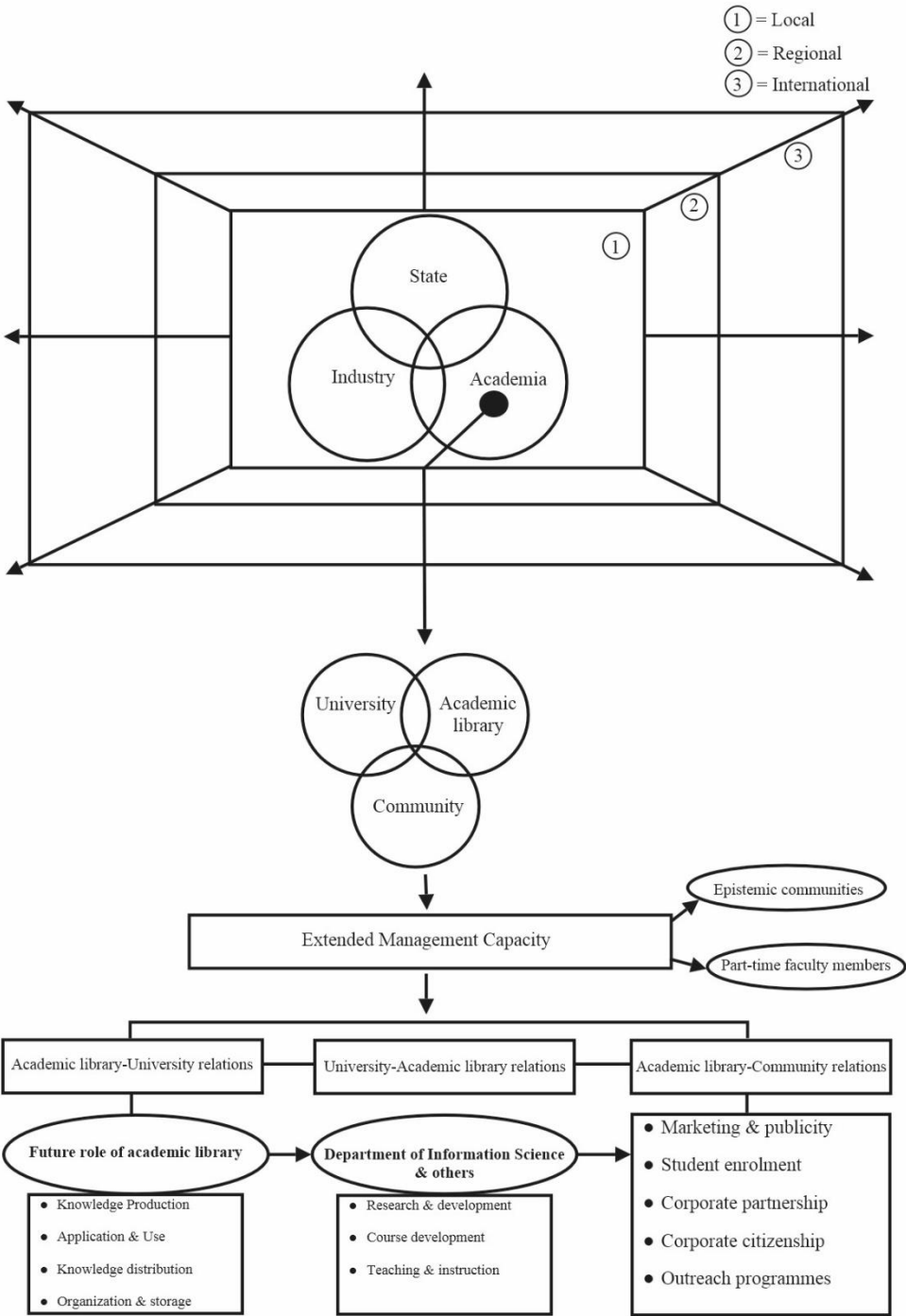


Figure 2: *Lefa la tsebo*: a proposed model for framing TUT’s libraries policies

The Two Levels of Implementation

The proposed model is two-pronged and can be implemented at two levels, one broad and one specific. It can be useful at national, institutional and academic library levels. Nationally, there is a need for debates around the models used to shape the knowledge system of contemporary South Africa. Importantly, the national context is influenced by regional and international contexts and vice versa. At the academic library level, there is a need to think broadly about the position of the academic library in society's knowledge system.

The National and Institutional Level

The proposed model recognises that the intellectual culture of a country is crucial for the epistemological legitimisation of the indigenous knowledge system. The proposed model rejects the National Innovation System model (see Lundvall 2005) and embraces an element of the Triple Helix (see Etskowitz and Leydesdorff 1995; 1997; 2000). The Triple Helix thesis contends that academia can play a leading role in innovation. It claims that the reshaping of institutional arrangements may be based on an overlapping network of communications and expectations. This network of communication and expectations is characterised by academia-state-industry relations.

The elevation of academia as a leading force in innovation can assist universities and their supporting entities, i.e. academic libraries, on a transformative path. It has been illustrated that knowledge production is one of the processes of society's knowledge system. Universities are centres of knowledge production in contemporary societies (see Dick 1982). However, academic libraries such as those at TUT narrowly focus on knowledge organisation and storage as well as distribution. This narrow focus is a result of the manner in which the relationship between TUT and its libraries is configured.

Therefore, the reconfiguration of the relationship between the state, industry and TUT is a prerequisite for the restructuring of the future role and responsibility of TUT's libraries.

The Academic Library Level

The proposed model argues for the reshaping of institutional arrangements between TUT, its libraries and local communities based on the concept of the Triple Helix. The reshaped institutional arrangement may be based on a network of communications and expectations characterised herein as university-academic library-community relations. For institutional rearrangement to occur, TUT's libraries need to have an extended management capacity.

Extended Management Capacity

Two major challenges currently facing TUT's libraries are budget constraints and the inability to extend their management capacity in order to create third revenue streams.

“Funding for the library, and the priority given to its operations within the overall institutional budgets, is a matter of great concern for librarians” (Hoskins and Stilwell 2011, 51). As a mechanism of academic capitalism, extended management capacity may be aligned with the future role of TUT’s libraries.

The future role should include taking part in other processes of the knowledge system such as knowledge production, application and use. Strategically, extended management capacity may be tied to the recently launched TUT Business Development Unit. It may also be linked to a capacity building programme which assists the LIS community to acquire highly specialised skills for challenging new roles. For instance, LIS committees and sub-committees may be extended to include epistemic communities. Epistemic communities refer to a network of professionals with recognised expertise and authoritative claims to policy-relevant knowledge in the area of a particular issue. Such professionals can have different backgrounds and can be located in different countries, but they share a set of norms that motivate their common action, a set of beliefs about central problems in their area of expertise, criteria for evaluating knowledge, and a common enterprise to create policy. The concept of epistemic communities was first introduced by John Ruggie and then refined by Peter M. Haas (Clunan 2013). The role of epistemic communities would be to take part in international conferences where important global policymaking decisions are made.

Epistemic communities would typically be made up of policy analysts, information scientists, and language practitioners. Furthermore, they may also include part-time library/faculty staff contracted to partner with corporate companies on a project to project basis. Moreover, the introduction of a university press may assist in dealing with scholarly publishing challenges. To avoid financial hurdles that may come with the introduction of a university press, a phased model should be used.

Publishing and university presses determine the academic culture of a university (Le Roux 2013). In envisioning the character of the prospective TUT university press, the taken-for-granted multiple realities highlighted earlier may therefore be considered. The press publishing activities should be managed and determined by the Library and Information Services directorate in partnership with the broader university. Extending management capacity can assist TUT’s libraries to bring the corporate world into the university by combining state and private partnership investments. It would create new partnerships with an entrepreneurial focus in order to take advantage of the new global knowledge economy led by the academic, capitalist knowledge-learning regime. New partnerships by TUT’s libraries may lead to research and infrastructure investment. This can create new products and services marketed to students and pave the way for the future role of TUT libraries.

The Future Role of TUT's Libraries

The future role of TUT's libraries should include taking part in other processes relevant to a knowledge system. Dick (1982) and others assert that libraries can take part in knowledge production, application and use. The assumption of this future role should not overwrite the current functions of organisation and storage as well as distribution but strengthen them. TUT's libraries' participation in the knowledge system should be based on a network of communication and expectation based on the two helices (academic library-university relations) in partnership with the third helix of the community. This future role may be shaped by rhetoric and debates on the inclusion of local epistemologies in the collections of TUT's libraries.

Epistemology may assist to investigate to what extent TUT's libraries' current classification system reveals bias (i.e. in terms of language and gender) that should be corrected to maximise access and promote inclusiveness in terms of alternative epistemologies. Epistemology refers to how we know; as Tennis (2008, 103) explains,

we make implicit epistemic statements about knowledge of concepts, acts ..., entities and systems. In so doing, we create knowledge, and our epistemic stance dictates what kind of knowledge that is. Some common names of epistemic stances are: pragmatism, positivistic, operationalist, referential, instrumental, empiricist, rationalist, realist, etc. Each of these stances make claims as to what kind of knowledge can be created through research, and how it is gathered and how it is presented. These epistemic stances do this work because they have a systemic view on reality, our knowledge of it, and the meaning we can ascribe to it.

For example, public administration books at the TUT library in Mbombela are dominated by English in spite of the fact that the dominant language in Mbombela is SiSwati. The investigation should be in line with TUT's efforts to develop SiSwati for academic, scientific and communication purposes (TUT 2005).

In this article, the emphasis is on assumptions about recorded knowledge organised and stored as textbooks and evaluated and synthesised as documents in TUT's libraries (see also Dick 2013, 8). Understanding the nature of the knowledge organised, stored and distributed by academic libraries as well as the social context within which it was created is imperative for the transformation of the curriculum at TUT. TUT's libraries should play a leading role in knowledge production activities aimed at redressing the legacy of colonialism and apartheid in higher education. This can be achieved by reconnecting with the historical relationship academic libraries have with research libraries as indicated in the rationale. Policy and practice may differ at other South African universities.

Following the release of the report of the Commission of Inquiry into the Feasibility of Free Education in 2017, it is important to highlight the issues raised about academic

libraries in the Heher Commission report. The commission heard evidence that libraries were an increasing cost at universities (CIHET 2017, 319–22).

Financial challenges could be averted by using a phased model during implementation. The authors agree with the general call for the transformation of libraries and the recommendations of the Committee of Higher Education Libraries of South Africa (CHELSA) in the Heher report (CIHET 2017). The general call for the transformation of libraries should encourage TUT's libraries to look for new revenue streams to implement the proposed model.

Knowledge Production

To begin with, the primary basis for partaking in knowledge production activities should be the introduction of research commons across TUT's libraries. Research and infrastructure investment generated through new partnerships would assist in this regard. In the context of this article, knowledge production in TUT's libraries should take cognisance of taken-for-granted multiple realities represented by distinctive knowledge societies fighting for truth and legitimacy through language and communication.

Importantly, through the university, TUT's libraries may forge symbiotic relationships with local communities in order to integrate values and problem-solving strategies considered public knowledge, especially those found outside "normal science," i.e. indigenous knowledge, within the knowledge production processes of the university. Gradually, TUT's libraries would embrace their societal responsibility towards the "Africanisation" and "decolonisation" of the university curriculum.

The process of knowledge production within TUT's libraries would resonate well with the knowledge society approach embraced by contemporary knowledge-based economies and may be greatly influenced by the local intellectual culture as well as regional and international factors. The three helices of academia-state-industry may have different expectations from one another at the national phase of implementation of the proposed model. Priority should be given to investment in education, research and development in the human and social sciences such as information science.

It is generally acknowledged by key sources of the knowledge society approach (see [Drucker 1993; Lane 1966; Machlup 1962; UNESCO reports 2005; 2013] in Molepo 2018, 63–71) that countries which invest in education, research and development produce specialised technical knowledge. Such specialised technical knowledge is central to the knowledge system of a contemporary country. The implementation of the library phase of the proposed model may involve the three helices of university-library-community. With the academic library playing the role of mediator, the other role players should focus on the legitimisation of local indigenous epistemologies in scientific discourse. Once legitimised, scholars interested in knowledge production

would have the motivation to research and develop local indigenous epistemologies. This may lay a strong foundation for planned application and use of knowledge in society.

Knowledge Organisation and Storage

In order to strengthen the aspect of knowledge organisation and storage, TUT's libraries should also focus on organising their staff into a group of knowers. According to Wilson (1977) (cited in Dick 1982, 19), knowledge organisation is not only about the organisation of recorded knowledge, it also involves the organisation of knowers.

As indicated earlier about the role of epistemology, the main task of these groups of knowers would be to investigate the extent to which TUT's libraries' classification systems reveal biases in terms of gender, language, etc. In other words, the organisation and storage aspect should be split between support and academic roles. Support staff (i.e. the current Library and Information Services department) should continue to organise and store recorded knowledge in order to support the research, teaching and learning taking place in academic departments and faculties of TUT. Academic staff should be organised into a Department of Information Science. Their primary focus should be research, teaching and learning.

Knowledge Distribution

The impact of technology on knowledge distribution in TUT's libraries is clearly evident. In addition to printed materials, all TUT's libraries subscribe to electronic databases which host various digital resources. Examples of digital resources made available through a shared network between students and staff include journal articles, e-news articles and e-books. In addition, access to completed electronic dissertations and theses is made possible through the digital institutional repository. TUT's libraries should explore opportunities that come with the distribution of digital resources over a network. For instance, the open access model could be used to forge partnerships with non-scientific communities. This should create conditions for knowledge that is produced for a purpose (i.e. emphasising the legitimisation of indigenous epistemologies).

Application and Use

The current context and functions of TUT's libraries do not allow for planning regarding how knowledge is applied and used in society. Once organised and stored, recorded knowledge is distributed to patrons without much consideration for the consequences of its use in society. Instead, the responsibility is outsourced to faculty staff. Similar to knowledge production, its application and use are functions relevant to the wider knowledge system and therefore have a direct link with the core functions of academic libraries.

Failure to take responsibility for the consequences of knowledge utilisation problematises the role of academic libraries and their response to social conflict. Similarly, expectations from the three helices of university-academic library-community relations should be measured by the epistemological legitimisation of indigenous knowledge through scientific discourse. Once legitimised, conditions for planned social change would be created. Both support and academic staff in the LIS community should take part in knowledge production, application and use as organised bodies of knowledge.

Department of Information Science and Related Fields

Expectations created between the three helices should lead to the reshaping of institutional arrangements between the two helices of university-academic library relations. One of the expectations from the university should be based on the organisation of bodies of knowledge arranged according to disciplines and related fields. It has been demonstrated that organisation and storage of information goes beyond just the classification of library resources. It is also the organisation of knowers (Wilson 1977 in Dick 1982, 19; Gibbons et al. 1994).

Research and Development

Information science courses are currently not offered at all TUT campuses across the four provinces to which the university caters. The absence of information science courses at TUT can be traced back to the proposal for the restructuring of education in South Africa made by former Minister of Education, Kader Asmal, in May 2002. The focus on consolidating faculties during the academic restructuring process resulted in the inclusion of information technology on the academic topography.

This led to the exclusion of disciplines such as library and information science. A task team should be formed to conduct research that will look into the opportunities and risks of introducing a department of information science to TUT. An academic department is necessary because a credit bearing module (i.e. information literacy) facilitated by librarians has been introduced by the university. Research and development expectations for the Department of Information Science at TUT should be aligned with the *Research Outputs Policy* (DHET 2015).

Course Development

TUT's libraries' partnerships with industry partners who develop information science courses should be encouraged. Course development should be based on empirical data collected by the task team. The development of courses should consider financial constraints. As indicated earlier, a phased model could be used to address financial constraints that come with course development.

Teaching and Instruction

A Department of Information Science at TUT should benefit from the public, private, and state opportunities that come with the introduction of short learning programmes, national higher certificates, diplomas and postgraduate qualifications.

The Significance and Relevance of Information Science

The question may be asked, what is information science? The answer to this question does not only lie in providing a definition. It is the duty of information professionals trained in information science to create awareness about the significance and relevance of the discipline. For sources that emphasise the relevance and significance of information science elsewhere in Europe and the United States, see Borko (1968), Saracevic (1995), Rauch et al. (2017).

When politicians and representatives of private companies talk about the “fourth industrial revolution” in South Africa, they most certainly do not think about information science. There are a lot of debates about the digital divide, artificial intelligence, the information society and knowledge economy among various role players (Harvey 2019). Such debates exist among academics, including the executive management committee of TUT. Yet these debates centre on core sub-disciplines and fields of information science which have been successfully incorporated into computer science and other disciplines.

It is not surprising that departments of information science at some universities have closed down. However, the closure of these departments should not cast a spell of pessimism among information professionals. There are exemplary information departments at prominent South African universities which are flourishing. The University of South Africa and University of Pretoria are examples.

Academic Library-Community Relations

It has been illustrated that public knowledge is becoming more socially distributed. These developments have been noted by Gibbons et al. (1994). The authors argued that “collaboration between knowledge practitioners and researchers includes a wider more temporary and heterogeneous set of practitioners collaborating on a problem defined in a specific and localized context.” It is therefore relevant that the communication between and expectations of the two helices (academic library-community relations) be centred on indigenous local communities. Importantly, the two helices may expand and/or collapse to form trilateral networks with hybrid organisations by overlapping institutional structures. Problem-solving strategies in policy formulation may consider and prioritise public values and norms of local indigenous communities. The following mechanisms may apply:

Marketing and Publicity

The value placed on the role of the student in the proposed model cannot be overemphasised. The idea is to move beyond thinking about the student as a consumer to considering the student as a marketer. In addition, the guidelines provided by Hay and Van Gensen (2008) on branding in higher education are worth noting. The proposed model corroborates the guidelines and further emphasises that TUT's libraries need to engage rigorously in marketing and publicity activities. While the behaviour of staff has to reflect the values and principles of the university, it has to also reflect some sensitivity towards social, political and economic issues in society.

Student Enrolment

It may also be the prerogative of TUT's libraries to determine the type of patron that uses their collections. This may also be extended to the type of graduate the university produces.

Corporate Partnerships and Corporate Citizenship

In taking up the entrepreneurial route, TUT's libraries may place information ethics at the centre of their operations. The prevalence in the use of information and communication technologies in the functions of TUT's libraries poses new challenges relating to intellectual property and copyright. The expectation may be that TUT's libraries and the university become more economically, environmentally and socially sustainable as well as more accountable and transparent, inclusive, ethical and equitable. Public-private partnerships may explore opportunities such as the introduction of short learning programmes designed to provide solutions for academia, state, industry and society at large.

Outreach Programmes

Effective academic library-community relations may be strengthened by initiating outreach programmes guided by the principles of corporate citizenship. This may assist academics and non-academics to engage local communities through sponsored and voluntary projects. For instance, the outreach strategy may be aligned with the weeding policy. Outdated stacks of library material gathering dust in storerooms could be donated to community libraries in need of such resources. Such donations must be based on communication and expectations.

Conclusion

This article started by highlighting that academic libraries traditionally support universities in their teaching, learning and research activities. The embeddedness of academic libraries in universities makes it difficult to link their functions to other related processes in the wider society. The core functions of academic libraries in universities can be construed as the organisation and storage as well as distribution and access of

knowledge. As indicated earlier, academic libraries have a historical relationship with research libraries. The narrow focus of academic libraries on organisation and storage, distribution and access does not do justice to the historical connection academic libraries have with research/special libraries. Academic libraries do not operate in a vacuum. They are part of the wider society. The model of society's knowledge system highlights other processes directly related to the current functions of TUT's libraries. These functions of TUT's libraries have been empirically tested and confirmed in the dissertation by Molepo (2018). It has been shown that the oversight of processes related to TUT's libraries in society's knowledge system problematises their role and responsibility as well their response to social conflict. Also, transformation initiatives by strategic partners of TUT have not been adequately inclusive of the libraries.

In addition, the hosting of separate transformation initiatives by the directorate of TUT's libraries and the university strategic planners reveals a pattern of inconsistency in the transformation agenda. This article proposes a model for TUT's libraries. The proposed model for TUT's libraries is an adaptation of the model of society's knowledge system and also consists of elements of other evaluated models that were deemed suitable. The elements of these models were tested using self-developed criteria. The proposed model can assist in facilitating the transformation of TUT's libraries in line with the recently published transformation framework of the university (TUT 2018) and changes taking place in higher education. It can also strengthen the overlay of communication between the helices of university-academic library-community towards the political, cultural and socio-economic emancipation and development of local indigenous African communities. Extending management capacity can open a gateway for entrepreneurial activities that TUT's libraries can use to expand into the wider society. Entrepreneurial activities are necessary to ease the pressure on already strained library budgets.

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