Curriculum Framework Considerations for Introducing Networked Learning within a Career-Focused Higher Education Institution: A case study of the Polytechnic of Namibia.

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ABSTRACT

In this small-scale interpretive case study the Polytechnic of Namibia (PoN) curriculum framework (CF) is explored in relation to its openness to Networked Learning (NL) principles. The PoN is a career-focussed institute educating leaders for the new economy. At its core is a "Knowledge Economy" (KE), which supposes an educated and skilled population to 'create, share, and use knowledge' and requiring lifelong learning due to rapid changes in the KE (World Bank, 2003, p. 2). Additionally, knowledge is increasingly being generated, developed, accessed, applied and transferred in innovative ways, with advancements in ICT enabling rapid expansion of knowledge networks. Innovation is a primary attribute of employees in contemporary workplaces and is requiring what Dovey (2006) calls a 'new vocationalism', one that focuses on the ability to learn how to learn and communicate effectively with colleagues and managers. Thus, knowledge revolving around processes and know-*how* is valued over static propositional knowledge or know-*what* (Dovey, 2006).

NL is a pedagogical approach focusing on the connections between people and resources within ICT-enhanced networked settings (Jones, 2004a). Its concern is with meaning making and learning within social processes and within the social and organisational dynamics within which the processes take place (Jones, 2004a). NL is seen as being appropriate for the new economy because of its culture of connectivity and collaboration (Parchoma & Dykes, 2008), which in turn advances employability skills.

In this study, three top PoN managers completed an interview and questionnaire to get a sense of; the underlying ideas that underpin the CF and its flexibility, which were then balanced against NL principles. Although this small-scale research cannot offer definitive conclusions regarding the openness of the CF to NL principles, it highlighted several points of interest and further research possibilities. Tentative findings intimate the CF as being flexible regarding teaching, learning and assessment strategies however, because of its career-focused, industry-defined curriculum, the use of an adaptable, student-driven NL approach may prove challenging. Overall, what is needed at this stage are pilots of NL strategies involving multiple stakeholders to establish what works and what may still be problematic across all CF elements. Also, research may also focus on the question of how the PoN can move away from a more technicist e-learning approach to embrace NL practices.

Keywords

Networked Learning, technical education, professional education, vocational education, curriculum framework, knowledge economy

Introduction

The Polytechnic of Namibia (PoN) is a dual mode Higher Education (HE) institution offering full-time courses, part-time, distance education and e-learning modes of study. Its mandate is to deliver career-focused HE (PoN, 2009).

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At the core of the PoN is a focus on educating leaders for the new economy to address the needs of the nation at large. It recently introduced a curriculum framework (CF) (PoN, 2009) to guide all staff and to 'bring together all aspects of the PoN's expectations in terms of programme attributes and development imperatives, teaching and learning and assessment to provide a single coherent guiding document within which these academic activities are carried out' (PoN, 2009, p.5). The focus of this study is the e-learning mode of study.

NL is a pedagogical approach focusing on the connections between people and resources within ICT-enhanced networked settings (Jones, 2004a). NL is seen as being appropriate for the new economy because of its culture of connectivity and collaboration and subsequently knowledge workers come to expect opportunities for networked, collaborative learning in HE (Parchoma & Dykes 2008; Gosh, 2004).

Three top managers involved with the CF participated in this case study and their views on the underlying ideas that guide the CF were balanced against those that underpin NL. It is hoped that findings will tentatively indicate the openness of the CF concerning NL approaches and provide an initial impression of its flexibility regarding NL teaching, learning and assessment strategies.

Orientation to the study

The overall research question that this study aimed to address was as follows:

To what extent is the career-focused Polytechnic of Namibia curriculum framework open to Networked Learning principles?

To answer the research question, three further guiding questions were developed:

1 What underlying principles of the curriculum framework are open to NL principles and which ones are not?
2 How flexible does the PoN management view the curriculum framework?
3 Where can the career-focused curriculum framework accommodate NL principles?

Setting the context for the study

Namibia and the Knowledge Economy

As a result of economic inequalities, the Government of the Republic of Namibia (GRN) set an imperative to uplift Namibia's economic standing on a national and global scale and contribute to the well-being of its citizens. As stated within Namibia's strategic plan, the main aim is to make Namibia a prosperous and industrialised nation, developed by her human resources and envisions the country as a knowledge-based economy and a technology driven nation (GRN, 2004). In view of this, the GRN established PoN's mandate to that of providing career-focused education, aiming towards the employability of its graduates and in particular educating the leaders for the new economy (PoN, 2009).

In referring to the 'new economy' the PoN has as its core a Knowledge Economy (KE). To support such an economy, the World Bank (2003) suggests that an educated and skilled population is needed to 'create, share, and use knowledge' (p.2), and that 'lifelong learning is imperative due to rapid changes in the KE' (p.3). Innovation is a primary attribute of employees in contemporary workplaces, with Dovey (2006) pointing to the need of a 'new vocationalism', one that 'move[s] away from training workers in stable and routinized competencies measured by standardised tests...[instead focusing on] the ability to learn how to learn...[and] communicate effectively with colleagues and managers' (p.391). Increasingly, knowledge revolving around processes and know-*how* is valued over static propositional knowledge or know-*what* (Dovey, 2006).

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A brief review of Networked Learning

Networked Learning (NL) is defined as 'Learning in which information and communications technology (ICT) is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources' (Goodyear, 2001, p.9).

NL is based on social theories of learning emphasising its abilities to enhance online teaching, learning and assessment. It focuses on the *connections* between all people of the network and between people and the resources that make up the network setting (Jones, 2004b). The interactions in this sense occur in relation to computer *networks* (Jones et. al., 2008, Jones, 2004b). With learning, the focus is on negotiation of meaning between individuals and with their critical engagement with texts. In this way knowledge is constructed between members, mainly through discussion and debate and influenced by socially situated contexts. Technology in this case does not determine the forms of learning, teaching and assessment that are possible, rather technology is seen as a tool to facilitate learning, in particular to network people together with their resources and to take advantage of networking possibilities (McConnell, 1999).

Strengths of NL include *inter alia*; learners being able to experience high interactivity and engagement within a learning process; high social aspects and collaborative processes and, access to ever changing global resources (Goodyear, 2001). Additionally, NL may provide institutions with effective management and administration of teaching and learning and enable larger number of students' access and active engagement with learning, more so than in face-to-face situations (Hammond, 1997). NL is seen as being responsive to the KE in that it helps both develop and use "working knowledge" and; in enhancing "epistemic fluency" (See Goodyear, 2001; Goodyear 2006; Zenios, 2011).

However, NL is not without its detractors. Goodyear (2001) and Greener & Perriton (2005) see the limitations as being related to the predominately text-based communications leading to depersonalisation and decreased expressive richness, the delay in responses to postings/questions/queries, the need to encourage students to participate in discussions and lengthier learning processes within group work situations. This is supported by Hammond (1997) who purports that NL can make more demands on students and lecturers due to the socially mediated and interactive approach. Additionally there is a premise that, because of the changes in knowledge processing encouraged by the KE, NL (according to McConnell, 1999) is 'changing the way in which traditional face-to-face, institution-based and distance education is delivered' (p.177) requiring a different approach to education than what HE institutions are accustomed to (Sloep & Berlanga, 2011). They propose that NL can provide such an approach. However, the change may pose significant structural and systemic challenges for HE institutions as a whole (Baumeister, 2005).

To date, the challenges have restricted innovation especially within the areas of teaching, learning and assessment (Baumeister, 2005; Bricheno, Higgison & Weedon, 2004). Moreover, there is very little reported research of NL integration within the curriculum frameworks of vocationally-orientated institutes and where it does exist, it focuses on integration of NL within academically-orientated universities.

e-learning at the PoN

Whilst e-learning can mean many things to many people, at the PoN it is defined as "....the use of ICT for learning and teaching...and refers to the use of a Virtual Learning Environment to deliver education...(PoN, 2010, p.3). The policy statement recommends *inter alia* that e-learning provide student-centred learning experiences that are flexible, responsive and effective and meet the needs of all students; ensure that e-learning is used as a tool for learning and teaching and be applied consistently throughout all courses and in line with related policies (PoN, 2010).

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PoN and its Curriculum Framework

The PoN CF was developed in 2009 by the Registrar in consultation with other academics to guide undergraduate programmes. The PoN expects its graduates to possess the attributes of: technical and/or professional and/or subject knowledge and the application thereof for the purpose of furthering a career or engaging in economic activity in the field of expertise or cognate area of learning of the relevant qualification; being critical thinkers and problem solvers; good communication skills in English and another language if required; a culturally sensitive global and responsible citizen and; engaged community members (PoN, 2009). The CF in turn sets out what must be done across the board to ensure such outcomes. As a side note, to date there is no teaching, learning and assessment policy and as such the CF is the only document that academics can use to guide academic programme development and implementation.

Methodology

An instrumental case study approach guided this qualitative study. In particular, it used an interpretive exploratory method. It is interpretive because the intention was to understand the perspectives and positions of the research participants within a "real life" context (Thomas, 2011) as opposed to taking an objective stance of the study i.e. "from the outside looking in" (Huberman, 1994), which is taken because of the socially mediated research process.

Three top PoN management members (M) constituted the research participants. They were the: Registrar (the original developer of the CF and involved in overseeing the development of PoN curricula); the Director: Programme Development & Registration (the implementer and administrator of the CF) and; the Assistant Registrar (manager of the open and distance unit and directly involved with the CF as it relates to e-learning). The three were purposively selected because of their direct involvement past and present and ability to influence the development and implementation of the CF. Their views are focused upon because it is generally believed that NL and/or e-learning will only have an impact when it becomes fully embedded in institutional policy, practice and culture, with managers (as well as all other stakeholders) seeing it as part of the normal working practice (Bates, 1997). It was initially intended that the PoN Rector and Director: Centre for Teaching and Learning should contribute to the study however their participation could not be secured. Further, the views of PoN lecturers would have contributed to a more rounded study providing deeper insight into the acceptability of NL principles and resulting implementing strategies. However, this was beyond the scope of this study. As such, it is recognised that the study provides a partial view of the openness and flexibility of the CF, which could be expanded when including the full complement of staff directly involved with the development and implementation of curriculum.

Data was collected through the use of one-to-one semi-structured interviews (I), an individual open-ended questionnaire (Q) and through document analysis (DA). The three sources were employed primarily to increase the depth of collected information and to get a "true" fix on the situation, but also with a secondary view, where possible, to validate findings (Silverman, 2010) and prevent any bias inadvertently applied.

Findings and discussion

To place findings in perspective, two ideas that emerged and appear to provide a backdrop and directly influence the CF's openness to NL principles are; the overall mandate of the PoN and; the non-prescriptive eclectic directives for teaching/learning and assessment. Below the CF components namely, curriculum development; teaching and learning and; assessment are discussed in relation to the above ideas and the openness of the CF to NL principles.

Note: A summary of the findings are found in Table 1 below.

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Curriculum development and the extent to which it is open to NL principles

The PoN curriculum is one that is very much focused on pre-defined industry-identified competencies. There is space for student identified needs however, they "...do not take the limelight entirely.....there is a much stronger focus on delivering to the needs of the country, the needs of the economy". [M1-I]. As such, management in this study all noted that any potential programme should justify its curriculum as being useful to the economy, show its utilitarian functions, and ultimately, advance the employability of graduates in specific fields [M1-Q,I; M2-Q,I, M3-Q].

The CF recognises that technical/professional/vocational competencies are based on foundational competencies (PoN, 2009) which "provide students with specific…competencies underpinning learning at higher education level" [M2-Q]. Although PoN management accept that generic competencies are best integrated throughout all courses [M1Q], these competencies are mainly contained within distinct institutional core courses for example, Contemporary Issues and Computer User Skills. [M2-Q]. This situation is not unique, with De la Harpe, Radloff & Wyber (2000) asserting that employability skills are rarely taught as undergraduate programmes but rather on an 'ad hoc basis, stand alone, out of context, add-on and often designated as remedial and of limited value' (p. 3). These findings hint at the CF as being relatively flexible within its attempts to incorporate foundational and lifelong learning skills within a fairly pre-determined CF developed around the needs of industry. It may not be so flexible with regards to content and structure, due to quality assurance mechanisms requiring the curriculum to undergo a lengthy institutional process and with the curriculum only being revised if changing by more than twenty percent (PoN, 2009). Furthermore, programmes are expected to have a minimum shelf life of three years. This is recognised as being potentially problematic as some courses in the KE "...cannot wait three years before revision is allowed. This will certainly result in outdated course content being taught to students...the approval procedures...are very bureaucratic, which at times seriously impede the demand for teaching rapidly changing information..." [M3-Q]. The managers however did hold a positive outlook with curriculum changes and noted that it would be possible if planned ahead [M2-Q] and that e-learning could provide a flexible means for doing so [M3-Q]. Thus, a flexible curriculum, responsive to context needs "...would be possible, but challenging, given the PoN's internal curriculum development and approval process for credentialed programmes....it would be fairly easy to revise/amend individual courses on a regular basis to ensure their relevance/responsiveness [but] challenging from a programme perspective" [M2-Q].

Given the above one must still be cautious as Clegg & Steel (2002) propose that flexibility mediated through technology can take on mythical properties in legitimising new practices where technology is seen as possessing characteristics that can transform the teaching and learning practices and experiences. They suggest that underlying assumptions about the nature of education and knowledge need addressing before it can improve flexibility within NL initiatives. This is supported by Hammond (1997) who argues that NL will only be developed by those with sympathy for more socially constructivist approaches to teaching.

Moreover, the need of "economies of scale" was mentioned by several managers (M2-I, M3-I, Q) when questioned about the extent of flexibility of the curriculum. Greener & Perriton (2005) propose that the source of delivery of e-learning in HE is quite rigid and any "flexibility" here requires standardisation of course materials. This can '[reduce] the possibilities of students and tutors being innovative in respect of content or processes' within NL (p.75). Cousins & Deepwell (2005) further state that a prescriptive curriculum design will undermine any communitarian values that NL brings, which in turn will pose pedagogical contradictions (see below).

Teaching/Learning strategies and the extent to which they are open to NL principles

All managers agree that the teaching and learning strategies employed within the CF are sufficiently varied and diverse to provide for an eclectic approach throughout all PoN programmes. The CF is said to stop short of affirming certain teaching/learning strategies over others due to a lack of research within the institution and little evidence of the "right" teaching/learning strategies [M1-I].

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Preparing graduates for employability is not clear cut although learner-centred process-focused approaches to teaching and learning is deemed more conducive to the development of these skills rather than the teacher-centred and content centred approaches (De la Harpe et. al, 2000). Further, Kearns (2001) contends that employability skills are fostered through active learning strategies, where 'learners take responsibility for their own learning so that they develop the attitudes, habits and skills of motivated lifelong learners and the acquisition of employability skills becomes a lifelong process' (p.3). In contrast in this study, when asked about roles of lecturers becoming a guide-on-the side with students directing learning, some misgivings [M1-I, M2-I]. Further, the facilitative tutor role was seen as being more suited to postgraduate level [M1-I, M2-I, M2-Q]. This is supported by Cousins & Deepwell (2005) who state that many rich case-studies of NL are at Master's level because of their amenability to strong network learning opportunities.

In terms of technology "...the CF embraces the use and integration of ICTs in teaching and learning...in consonance with requirements of the new knowledge economy" (M2-I). What is missing in the CF however is recognition of how, in a practical sense, ICT can provide for pedagogical differences. Although Foster, Bowskill, Lally & McConnell (1999) suggest focus should be on improving teaching and learning and only then to see how technology fits into these processes it seems that in the case of the PoN technology has driven teaching and learning. For instance 'e-learning is used to provide…a means of developing a community of students and academic staff' (PoN, 2009, p.24). Added to this are the Managers' opinions regarding the possibility of collaborative learning, for example "...opportunities [are] created for students to work collaboratively...through group work, group assignments, group projects... [and with] it being easier for students who are doing courses via e-learning since relevant features of the LMS can be exploited to facilitate collaborative learning" [M2-Q]. Again caution may need to be taken here to discourage a determinist view where technology usage automatically leads to community development and collaborative processes 'leading to definite educational outcomes' (Jones, 2002, ¶5). Also, a communitarian context cannot be forced upon students when they are exposed to it through a prescribed curriculum design. The advice is that we should 'understand that participation is the condition for transformation' (Cousins & Deepwell, 2005, p.62) and to recognise that learning cannot be designed, it can only be designed for (*ibid.*) highlighting the need for a flexible curriculum design where NL practices emerge from participants rather than imposed by facilitators (Cousins & Deepwell, 2005).

Assessment strategies and the extent to which they are open to NL principles

Currently, irrespective of the mode of study, all students assessed though non-continuous methods do the same final exam. However, when questioned about this all managers spoke of the possibility of e-learning having different assessment strategies, as long as it could adhere to the general principles of having validity, reliability, fairness, equitability and flexibility [M1-I; M2-I, M3-I]. Additionally, Board of Studies and Senate need to approve these strategies [M1-I, M2-I, M3] and require assurance of parity of standards between the different modes of study [M2-I, M3-I].

Another highlighted challenge expressed by managers in this study is that of student-led assessment. Although in principle managers saw value in including students in determining the assessment process [M-1, I; M-2-I; M3-I], they were cautious of its application. The reality of assessment determined and applied mainly by the lecturers is it may continue to sustain power relations and, rather than having more equalized power positions between the student and lecturer, it may sustain the conventional dyadic power relationship (Fox, 2005). This would not be conducive to the democratic principles of NL (Fox, 2005) and in turn work against collaborative and constructivist approaches to learning (Hodgson, 2002; Sclater & Bolander, 2004). However more research is needed to ascertain the possibilities of student-led assessment within the PoN.

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Table 1: A summary of the extent of openness of the PoN Curriculum Framework to Networked Learning Principles

	CURRICULUM FRAMEWORK COMPONENTS			
Extent of openness Of CF to NL principles	**Curriculum Development**	**Teaching/Learning (T/L)**	**Assessment**	**Illustrating extracts from transcripts or questionnaires**
Principles of the CF similar to NL principles	Producing graduates • with professional/technical/subject knowledge and lifelong learning skills/knowledge • Providing increased access to education possibilities and global resources	• Flexible, student-centred learning experiences • Collaborative/group work T/L strategies • Non-prescriptive eclectic T/L directives • e-learning: o to facilitate rapidly changing and flexible curriculum o used as a tool for T/L	• Use of various assessment strategies appropriate to the subject and the needs of all students • Non-prescriptive eclectic assessment directives	*"...the CF embraces the use and integration of ICTs in teaching and learning...in consonance with requirements of the new knowledge economy" (M2-I).*
Principles of the CF dissimilar to NL	• A focus on predetermined professional/technical/subject knowledge over NL pedagogy • Focus on "Just-in-case" over "just-in-time" course content • Standardised and prescribed top-down curriculum design	• e-learning technology-driven • Lack of recognition of NL "connections" pedagogy • Lack of strategies to enhance epistemic fluency • Role of educator: the "leader" • Learners not directing learning	• Standardised exam-driven assessment across all study modes • Educator-led assessment • Assessment focused on individual performance	*"Although there is nothing in the CF that prohibits [lecturers as a guide-on-the-side], there are a lot of problems with that noble idea, and [the CF] may lose the balance between utilitarian necessity and students being the centre-piece…" [M1-I].*
CF flexibility possibilities	• Incorporating generic lifelong learning skills across all courses	• Strategies incorporating collaboration amongst students and stakeholders	• Possibility to change assessment requirements for e-learning courses	*"[T]he PoNs national role of providing relevant, employable skills to the graduates, makes it necessary for a vetting process to be in place… we do not think that this is overbearing or difficult, should one plan ahead" [M2-Q]* *"...e-learning...can incorporate and facilitate rapidly changing and flexible curriculum" [M3-Q].*
Possible areas where NL principles can be accommodated within the CF	• Curriculum development based on socially mediated/social construction of meaning pedagogy • Regular course adaptation (totalling <20% of curriculum)	• T/L strategies based on socially mediated/social construction of meaning • Guide-on-side role possible for postgraduate courses • Use of e-learning to promote collaboration	• e-learning courses assessed continuously rather than exam-based	*"...generic competencies (such as problem solving, teamwork and critical thinking) are in most cases best developed though the teaching/learning strategies employed on courses" [M1-Q].*

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Conclusion and suggested further research

Although this small-scale research cannot offer definitive conclusions regarding the openness of the CF to NL principles, it has highlighted several points of interest and further research possibilities. Firstly, it points to the PoN mandate of educating leaders for the new economy and focus on career-relevant education which determines its industry-defined, standardised content-focused curriculum. A tentative idea is that such a mandate may constrain responses to student needs and flexible "just-in-time" learning.

Further, those programmes/courses that are exam-driven may possibly compel students to focus mainly on passing the exam and discourage student directed participation and collaboration for its intrinsic and lifelong learning benefits. These elements of the CF may prove challenging when implementing a NL approach based on principles of flexible, collaborative, socially mediated and situated learning, however for clarification purposes further research is needed. On the other hand, the CF is broadly defined and seemingly allows an educator to approach teaching, learning and assessment from a number of angles. The non-prescriptive, eclectic directives could encourage educators to apply strategies as they see fit, as long as the course/programme outcomes are being met. However, as this study could not accommodate the voices of the educators regarding their acceptability and utility of a NL approach, further research within this area is needed.

Additionally, the PoN recognises the benefit of using technology for accessing resources and for forming online communities. However, provisional findings suggest that there may be an element of technical determinism compounded by a lack of a teaching, learning and assessment policy to guide lecturers/tutors in putting pedagogy before the technology. Further research here may focus on the question of how the PoN can move away from a more technicist e-learning approach to embrace NL practices.

In conclusion, what is needed at this stage are pilots of NL strategies involving multiple stakeholders to establish what works and what may still be problematic across all CF elements. This is especially needed as Parchoma and Dykes (2008) suggest that 'one size will never fit across contextualised teaching and learning challenges [with] each instance of NL…a unique educational problem that requires a distinct pedagogical solution' (p.637).

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