

The Significance of Higher Education Pedagogy in Social Innovation Perceptions of Students at the University of Botswana

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Abstract

Purpose/Aim: This study examines how teaching can influence societal change; it explores students' perceptions of such influence.

Design/Methodology: A sample of students 94 students from different academic backgrounds was used. Transformative learning and critical pedagogy theory are used. A mixed methods research design was used. Quantitative data was analysed using IBM SPSS; qualitative data was analysed by thematic analysis.

Findings: The study finds that students' perceptions about the teaching methods used in the classroom were relevant to social innovation. Participants attained skills for creating change, self-esteem, and appreciation of multiple and varied perspectives.

Conclusion: The study concludes that participants acquired multiple perspectives about learning and change makers. This conclusion resonates with aspects of the critical theory which recommends skills for self-changing, critical thinking, ability to appreciate multiple perspectives, shifting dispositions, evaluation and choice making.

Limitations: The type of the study and its size—small sample size—limit the extent to which the results can be generalised about the creation of change makers of social innovation.

Implications: This study has implication for high education social innovation practice. The dominant teaching method is lecture which needs to be combined with innovative methods such as inquiry-based learning and project-based learning to produce change agents and makers. A possibility also exist to use critical, transformative, and constructivist pedagogy to create change makers and social innovators.

Originality: This study was designed and conducted in Botswana; the results add to the existing knowledge of the capabilities of higher education pedagogy that can transform the community through social innovation in Botswana.

Keywords: Social-innovation, Social-change, critical-pedagogy, constructivist-learning, transformative-learning.

Introduction

Social innovation has been defined differently by scholars from different fields. For this paper, two particular definitions are of interest. Philis' et al. (2008) defined social innovation is the process of developing and deploying effective solutions to challenging and often systemic social and environmental issues in support of social progress.

Westley (2010) conceptualised social innovation as a complex process through which new products, processes or programmes are introduced, leading to a deep change in daily routines, resources streams, power relations or values within the system. It also involves making strategies for improving lives. The dictionary definition for pedagogy is a method of teaching. This study engages innovative teaching methods to investigate what can work as a method for training learners to be agents of social change called innovation.

Literature shows a long history of university engagement with communities from as far back as the 7th century (Tandon, 2008). In post-colonial Africa, there were expectations that universities would be the driving force for change and modernization in the newly-independent states (Onsongo, 2017; Rubanju, 2011). These expectations were fulfilled to some extent. However, the contribution of higher education to national development has subsequently faded, according to Thomas & Bivens (2010). This was arguably due to lack of participation on the part of universities in social innovation. Before African innovation dream, social innovation was incorporated in some European countries, the USA, Latin America and Asia Lamasson, (1999). Africa followed the process in the mid-90s (Naido, 2003; Philis et al., 2008). This study attempts to describe how universities and related institutions of higher education in Botswana can be enabled to drive social innovation in a sustainable way through pedagogy.

Pedagogy liberates, informs, and constructs knowledge. In Southern Africa, two first presidents, Nelson Mandela (of South Africa) and Seretse Khama (of Botswana) both argued that education is a powerful weapon that can change the world, and can lead to freedom (Khama, 1976; Mandela, 2013; Nasongo et al., 2017). Pedagogy is a key element of education and, as such, it is expected to play a role in social change and social innovation. In his book, *Pedagogy of the Oppressed*, Freire (1970) alludes to pedagogy as a weapon for freedom in his discussion of critical pedagogy. The goal of critical pedagogy is to emancipate the learner. This implies that pedagogy can also do the opposite of emancipate: it can oppress the learners if poorly applied.

African countries that were colonized can attest to the damaging repercussions of the imposition of the colonizer's pedagogy. Within education institutions, teachers are not innocent agents of change either – hence the need for universities to consider the types of pedagogies they deploy. Social innovation education is about change in both the learner and society. Indeed, innovation is supposed to be a significant part of the role of higher education (Wilson, 2004). This has been recorded in literature in many regions of the world (see Elliot, 2013; 2012; Hyter & Cahoy, 2016; Matheson, 2008; Muligan et al., 2007). It is thus evident that institutions of higher education are tasked, at least in part, with the responsibility of preparing students for social and economic development within the communities in which they reside (Bulawa et al., 2017). These responsibilities are embedded in universities' vision, mission statements, policies and strategic plans.

Against this background, this study addresses the contribution of pedagogy to social innovation in African higher education, by engaging a case study at the University of Botswana. While the study presents the case of Botswana, the principles discussed may have wider relevance and application to other countries in Africa. In this era of economic struggle, automated services, cultural and technological challenges, technology-based teaching, diverse research methods and undefined university community service, university work has become increasingly challenging (Mullen, 2012; Olsson & Peterson, 2005). Such challenges necessitate research on the role of higher education in uplifting communities. One of these challenges is that academics are called upon to do social/ community service which includes social innovation, research, teaching for social innovation and undertake research projects (see Boyer, 1996; 1990; World Bank, 2002).

This challenge justifies the effort to articulate what social innovation is, what lecturers need to do about teaching for social innovation (James & Pedder, 2016; 2012; Rivers et al., 2015). There is a need to define the activities, processes and character of Higher Education pedagogies that can foster social innovation. This study therefore seeks to build, rather than test, theory regarding social innovation methods in higher education. The study provides results that add to existing knowledge of the capabilities of higher education pedagogy that can transform the community through social innovation. At the centre of this is the view that pedagogy is of crucial importance for social change as well as critical for social innovation (see also Adeyinka, 2003; Carlson, 2010; Eliot, 2010; Pedder and James, 2012).

Background to the study

It is widely recognized that universities play a major role in promoting and sustaining economic development through the development of a skilled graduate workforce, Dearing, (1997). What is unclear in the literature, is how a university can maximize its impact on the community and wider society through pedagogy. Andre et al. (2016) and Malheiros (2009) observed that there is a lack of studies on the relationships between education/learning and social cohesion that can explicitly inform policy on the role of universities in social innovation. There has been calls for well-documented, convincing methods for using pedagogy to drive purposeful innovation (Thorsteinnsson, 2012). Purposeful innovation does not simply happen: it must be planned, managed and evaluated. Evaluation can yield results that can direct or guide lecturers on how to achieve transformational change according to the University's mission and values (Elliot, 2012). Nonetheless, this task is not easy as social innovation education remains underdeveloped (Brennan et al., 2004). Regardless of these difficulties, pedagogy in higher education is increasingly expected to produce learning outcomes that contribute to scientific knowledge, discovery, transformation, innovation, and information which lay the groundwork for new operations and the creation of future employers and employees (Olsson & Peters, 2005; Gunlaugson, 2005).

African universities have roles to play in social innovation. These roles are stipulated in universities' teaching and learning policies and are tailored to individual institutions. The University of Botswana (UB) is no exception. Its policy for learning and teaching incorporates elements of social innovation. In 2009, UB sought to pay more attention to societal needs. It attempted to diversify its service to the community through social innovation. It also sought to clearly articulate its policy regarding student employability, economic development, and social responsibility. This policy guides teaching.

Problem statement

The problem addressed in this study involves investigating the contribution of pedagogy to social innovation within university. There is an on-going debate at the University of Botswana about ways in which lecturers should or should not present content that would provide opportunities for students to learn more effectively and prepare them for appropriate career paths. While suggestions abound, it appears that there is no consensus regarding what really constitutes effective teaching. This confusion similarly arises in debates around social innovation (Bulawa et al., 2017). On the other hand, university education has become an indispensable tool for community development. However, a change in pedagogy is required to reflect the complex relationship between the university and society. This relationship is complex because of the unique dynamics of both the university and society. The university is located within the community, as such, it is bound to develop close ties with its surrounding community, and

consequently position itself to co-solve societal challenges. Sometimes such solutions may arise through proactive partnership or interaction with financial sponsors or specialized cooperation/institutions, as was the case, in an AIDS intervention project that is on-going in which University of Botswana partnered with the University of Pennsylvania in the United States which include participation from the authors of this paper.

Aim

In line with the gap described above regarding social innovation studies in higher education research, this study aims to investigate the contribution of pedagogy to social innovation through a case study. It is expected that the results of the study will provide information regarding teaching methods that can be used to train learners for skills necessary for social innovation.

Objectives

The objective of this study is to provide information regarding teaching methods that can produce the skills necessary for social innovation. This includes: a) identifying the policies guiding pedagogy for social innovation, and b) understanding the nature of the pedagogy and whether it has the stated components of teaching and learning policy that are supposed to drive social innovation.

Theoretical framework: Transformative learning, critical pedagogy and social innovation.

Transformative learning is the process of becoming critically aware of how and why one's assumptions have come to constrain the way he or she perceives, understands and feels about his or her world" (Mezirow, 1997, p.167). Mezirow's perspective on learning involves processes, actions and the conditions under which to perform, perceive, comprehend, feel, compare old and new knowledge. Similarly, "transformative pedagogy is a progressive educational approach that includes democratic constructivist-based pedagogy for the promotion of social justice and democratic ideals to transform students and society" (Mezirow (1997, p.167).

It is a pedagogy that empowers learners to engage in dialogue, to co-construct meaning from educational material and experiences through an inquiry-based approach. This is in opposition to what Paulo Freire calls a "banking" orientation, in which learners simply soak up information and wait for exams to release it. It also promotes personal experiences, dialogical pedagogy, and aligns education with social justice (Martin & Osberg, 2007). Transformative pedagogy also aims to inform and equip learners with the capacity to effect change in one's environment. It is transformative in that the learner becomes aware of the social, political and/or personal barriers that produce oppression. It strengthens students' ability to make changes or control one's outlook on socially mediated constructs.

While transformative pedagogy is widely applied (see Ukpokodu, 2009), Donnelly (2016) argues that Mezirow's theory needs to be reviewed for greater clarity. Nonetheless, transformative pedagogy has the potential to engage students as critical thinkers by encouraging them to be activists to cite one example.

Ukpokodu (2009) examined the practice of transformative pedagogy in an undergraduate class and conceptualised transformative pedagogy as: a) an activist pedagogy that combines elements of constructivist and critical pedagogy that empowers students to critically examine their beliefs, values, and knowledge with the goal of developing a reflective knowledge base, b) an appreciation for multiple perspectives, a sense of critical consciousness and agency. According to Freire (1968) in Ramos (2005), the goal of critical pedagogy is emancipation from oppression through an awakening of a critical mind.

When achieved [critically minded], the learner can effect change in their world through social critique and politics. When engaged-pedagogically, the learner changes from a passive recipient to an active, critical subject. In doing so, a learner undergoes a struggle for ownership of themselves and their ideas. Freire argues that students are lulled into a sense of complacency by the circumstances of everyday life and that, through the processes of the classroom, they can begin to envision and strive for something different for themselves (see Ramos, 2005). Critical pedagogy combines Dewey's democratic pedagogy and Mezirow's transformative pedagogy by expanding social constructivist ideas by creating a critical learner, and activist for change.

Social innovation and higher education pedagogy in Africa

According to Mulan et al. (2007) teaching should start with and end with ideas that work. The Partnership for Higher Education in Africa (PHEA) presents several case studies of higher education and social innovation in a report by Grant Lewis et al. (2010). Of interest to this article were studies from Ghana, Kenya, Tanzania and South Africa.

In Ghana, education was used to address access, equity and poverty by changing the curriculum, teaching resources and methods. Ghana also developed bridging courses. The quality of teaching staff was also boosted. Teaching and learning were adjusted for varied expertise in liberal studies, critical thinking and other key priorities. The study from South Africa also addressed inequalities in education, starting with education policy. Amongst many changes, learning and teaching policies shaped by apartheid notions of separate development were changed (Cloete et al., 2004). The Kenyan study also involved massive university reforms that affected pedagogy (Mwiria et al., 2007). In that country, reformers designed community outreach programs, increased the variety of courses offered and set up a centre for entrepreneurship, introduced enterprise development and set up a centre to meet the demands and interest of the society.

In Tanzania, Mkudebrian et al. (2003) responded to market forces and redesigned courses to create job creators, self-employed graduates, and established an entrepreneurship centre. In summary, these case studies illustrate that pedagogy does influence learner attitudes, skill and self- concepts and the development of social innovation. Moreover, these case studies imply that higher education has always been involved in social innovation. The studies reveal that innovation intimately involves the social conditions in which it is produced. As students leave the university campus to serve society, they meet with social conditions that demand change. That change may involve resolving social, psychological, economic, cultural and technological problems, as well as the creation of new products or services. Therefore, social innovation can be influenced by changes of attitudes, behaviour, or perceptions and skills of students in higher education.

The role of a university is to develop student critical thinking skills, attitudes, perceptions and behaviours. Focused social innovation should be characterized by intended, planned, coordinated, goal oriented, and legitimated actions undertaken by social agents aiming at social change that will emerge in the establishment of new social practices (Matheson, 2008). African Higher education is no stranger to social innovation as was illustrated in the above case studies. After independence, most African universities heeded the call to support national development. In Botswana, there was education for peace, education with production and others (van Ransburg, 1962).

Rabanju (2011) and Lauglo (1982) point to growing appreciation of the need to support and encourage learner control over the learning process (UNESCO, 2011; Thomas & Vavrus, 2010; Hardman et al., 2008). Instructional technology affords learners control over their learning. Web-based multimedia production tools, blogs, wikis, twitter and other social media, podcasting, Skype, picture sharing and

Video broadcasting (as on YouTube), tele conferencing platforms, telepresence teaching, etc enable students to control their learning. In addition, instructional technology capabilities continue to grow, enabling universities to integrate social media and other upcoming technologies into teaching, learning and assessment. Learning technologies are also capable of fostering autonomy and engagement in situationally-relevant problems (Lee McLghein & Chan, 2008). Lectures can create opportunities for authentic learning that is personally meaningful and relevant to learners, by capitalizing on their interests and information technology competencies (Wallace, 2017). Such opportunities can lead to transformative learning with technology in the classroom (Dick et al., 2016).

Methodology

This study uses a mixed methods design. Creswell (2014) stated that mixed methods is generally applied where concepts are new or where there is a need to strengthen the depth and breadth of understanding the investigated phenomena. The study used quantitative methods to provide baseline data and qualitative data expanded the understanding and validity through triangulation. Data was collected through a questionnaire that included both open-ended and structured items. O'Cathain & Thomas (2004) states that general, open-ended questions, at the end of a structured questionnaire have the potential to increase response rates, elaborate upon responses to closed questions, allow respondents to identify new issues not captured in the closed questions. Creswell (2014) points out that mixed method research varies in nature and level. Based on this level concept, this study makes use of Creswell's convergent mixed methods design. This affords the researcher the opportunity to collect and analyse both data sets and merge the result for comparison and validation.

Population and sample selection

The participants were selected through a purposive sampling strategy (Denzin, 1998). Students were selected from five educational psychology classes taught by the authors. The population was 150 students coming from different faculties to take educational psychology as a core or elective subject in the Department of Education Foundations; 94 students were selected according to year of study and specialisation. They all gave consent to be included in the study.

Research questions

There are two research questions:

- a) What are the perceptions of students on the role of pedagogy in social innovation?
- b) How do students perceive the relevance of pedagogy in training for social innovators?

Analysis

Data analysis was done using IBM SPSS for the quantitative data; qualitative data was analysed using thematic analysis.

Ethical procedure

All ethical procedures were observed. Permission for the study was granted; students gave consent and were informed of the research process; those who wanted to withdraw could so.

Results

Tables 1 to 3 summarize in the appendices the responses to the closed questions (appendix 1, page 33-34).

Analysis

Quantitative Data

Tables one and two present results regarding the relevance of teaching methods in the classroom (at UB) to social innovation. The results show the high relevance of teaching methods to social innovation. Table one indicates that 87% of participants perceived the teaching methods as relevant. Similarly, table two shows that 86% of respondents felt that the teaching methods were relevant for developing self-reliance. Table three shows the results regarding the importance of integrating technology in pedagogy for social innovation: 48% of participants felt that it was very important and 37% indicated it was important. The remaining 15 % indicated that it is not important

Qualitative Data

Table 4 presented five ways in which programs and courses are useful to students. Rows one to five themes indicated that the course was useful to them, relevant to their study program and prepared them for their work. The sixth theme/ row 6 shows that some students were overwhelmed by work. In contrast, themes in row one to five present positive outlooks towards the teaching method. Students indicated that the methods are working and useful, they feel ready for work and community service. Table 5 shows the learning and teaching activities in the classroom created from concepts of critical pedagogy, transformational learning and constructivist activism. The left column is what students did. The right column gives technical concept labels of what students did. The results show that the created University of Botswana method produced what the theory purported. For example, group work, class discussions, debates gave students multiple perspectives. Individual work promoted self-reflection, self-application, self-confidence and learning from one's experience. Debates promoted Critical learning, evaluations, synthesis and Knowledge construction.

Research Question 1: What is the perception of students on the role of pedagogy in social innovation?

Table 4 presents results regarding the perceived usefulness of pedagogy for social innovation. An examination of Table 4 reveals that students have no mixed feeling about what pedagogy provided for them. In general table one displays self- confidence. By indicating that Pedagogy connects them with the outside world. The respondents indicated that programs with service courses connects them with the community and society at large. And that the teaching with practical innovation methods trained the students for social innovation. Thirdly they indicated that the course taught was relevant to social innovation skills training. Fourthly pedagogy trained them for community service. Fifthly, pedagogy prepared them for work and community service /social innovation. Lastly, participants stated that the topics were too many, overloaded with information consequently overwhelming the students.

Tables 1 and 2 complements Table 4 by presenting course relevance to social innovation at the rate of 87% for table1; and 86% for table 2. Table 5 adds the clarification of what happened in class which makes the statement in Table 4 clearer. The clarification is on what types of methods were used. Another point revealed in table 5 is that each method brought a different type of experiential learning.

Research question 2: How do students perceive the relevance of pedagogy to their training as social innovators?

Table 4 recorded some ideas of relevance of the courses. Students mentioned components of community service, activities for community development, course development, course relevance for a social innovation, intervention related to pedagogy Table 3 shows the integration of technology into pedagogy as somewhat important.

Concluding Remarks

The purpose of this study was to investigate the possible influence of pedagogy on social innovation within the African higher education environment. Analysis of the data revealed that there was a relevance, and importance of pedagogy impact on attitudes, knowledge and skills of the participants. The classroom activities were intended to make them reflect, reconstruct, refine and come up with new views of self-development and how to take development to the society. Combining both quantitative and qualitative response, it can be stated that the aim of the study was 50 % achieved in terms of the creation of methods that worked given the 87% of relevance. In terms of generalizing the result as having created change makers, that was not clear in the responses, but the potential of methods for provision of skills to work with the community, self-confidence and self-reliance came out clearly.

The study concludes that participants acquired multiple perspectives about learning and change makers. This resonates with part of the theory which states that students should be able to: acquire skills for self-changing, critical thinking, ability to reflect, appreciate multiple perspectives, reconstruct understanding of the subject, shift dispositions, evaluate and synthesize, and finally making a choice. The results showed that students' perception about the method used in class was relevant to their learning to be social innovators. And that the course had impacted on their general outlook and self-development. But fell short of developing change makers, activists ready for social innovation. In connecting the results with relevant literature some resonated with points made in the literature review. Especially the development of confidence and believe in self-efficacy. The results have implications for curriculum and instruction design for social innovation.

Recommendations

More studies on the contribution of pedagogy to social innovation are needed. Especially with different methods and bigger samples. Such studies may transform university teaching methods. The study also recommends the teaching methods generated by this study, which have potential to create activists, social innovators, and general change makers.

Limitations of the study

The type of the study and its size—small sample size— limits the extent to which the results of the study can be generalised about the creation of change makers of social innovation.

Implications

This study has implication for high education social innovation practice. The dominant teaching method is lecture which needs to be combined with innovative methods such as inquiry-based learning and project-based learning to produce change agents and makers. A possibility also exist to use critical, transformative, and constructivist pedagogy to create change makers and social innovators.

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Appendix 1

Table 1. Relevance of teaching method to social innovation.

Responses	Percentage
It is very relevant	4%
It is relevant	87%
It is not relevant	6 %
No answer	3%

Table 2. Relevance of teaching method to student development of self-reliance.

Responses	Percentage
It is very relevant	5 %
It is relevant	86%
It is not relevant	6%
No answer	3%
TOTAL	100%

Table 3 The importance of integrating technology in pedagogy for social innovation.

Responses	Percentage
It is very important	48%
It is important	37%
It is not important	2%
No answer	13%
TOTAL	100%

THE SIGNIFICANCE OF HIGHER EDUCATION PEDAGOGY

Table 4: Themes emanating from qualitative data

THEME	EXAMPLE
Service courses cited as connection between the society/community and the university	Community development counselling, sociology of gender
Course content, group work, case studies method, visits to big companies and research were cited as positive training for innovation	They are being coached for work, Business, community service by visiting big companies
Course relevance	1)Teaching is relevant for SI Course 2) relevant for teachers, for community development, course relevant for a social innovation intervention
Community Service	1)I feel I have been prepared for service, 2) I stand a good chance to be placed in rural area's service delivery where I can do community work outside my nursing duties, 3) I am ready for work and community service after taking this course
Ready for working in a project for social innovation	I think I have gained skills for work and social innovation (Mostly nurses responded that they are ready for work)
Overwhelming, will not recommend it to undergraduate students	The course topics were too many and overloaded with complex content and information

Table 5: Innovation methods used

Students Activity	Technical/ theoretical labels for student activities
PowerPoint presentation by lecturer	Technology based teaching
Students presentations	Learner based practice Experiential learning
Group work	Group work/social learning
Reflection on our work	Self-reflections/experiential learning
Class discussions	Critique, analysis, and evaluations
Show and tell about group visits to different companies	Learner based practice
Role plays	Practice, vicarious learning Social learning
Video presentation	Practice, vicarious learning
Individual online exercises	Self-application
Debates	Critical learning, evaluations and synthesis and Knowledge construction