

STUDENT VOICE AS INCLUSIVE CURRICULAR PRACTICE IN A TECHNOLOGY COURSE

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Institutions of higher learning often recommend learner-centered pedagogies that cater for student diversity. This article demonstrates how including students' perspectives in curricular review can help achieve this goal. The study was conducted using action research to monitor and incorporate student voice in the design and delivery of a technology course in a master's program in teacher education. Drawing on intersecting theories from the field, including equity, inclusion, action research, and student voice research, we used McKernan's spiral model to reflect on and redesign the course outline across two cohorts. Two phases of interrelated investigations of students' perceptions and responses to course content, strategies, and assessment methods employed face-to-face interviews, focus group interviews and the student evaluation of teaching (SEOT) survey to provide data for analysis. Students' perspectives were included in modifications of the course to improve learning outcomes and increase student engagement. The process of eliciting and responding to students' perceptive and constructive insights allowed an additional source of feedback apart from faculty review. There was increased student satisfaction with the redesigned course across cohorts, with more positive experiences reported. We believe that these results validate the use of action research in higher education to stimulate teacher reflection and engage students in curricular review and change to enhance learning.

Introduction

Given the diversity in education systems globally, a crucial aspect of learner-centered instruction is the need to promote active engagement and participation of students, in order to increase academic achievement of students (Marks, 2000; St. Onge & Eitel, 2017; Sulla et al., 2019). Indeed, teacher pedagogical practices are often judged on the extent to which they support an open and democratic climate to enable the development of creative and critical thinking skills thought necessary for 21st century citizens (Bellanca et al., 2012; Johnson, 2000). In teacher education programs particularly, it is important for practicing teachers and prospective teachers to be exposed to models of best practice (Darling-

Hammond, 2013), if they are to use recommended approaches to facilitate learning in their classrooms. It is equally important for teachers to examine their practice to monitor, evaluate, and, if necessary, adjust their pedagogical practice to enable students to succeed. Fullan (1993) considers self-examination an important facet in the development of teachers. Because of the key role they play, teachers can be instrumental to the successful attainment of innovation and change in education through a re-culturing of traditional positions and practices. In addition, from a sociological perspective, theorists such as Freire (1992) and Apple (1995) highlight the fact that cultural practices grounded in ideologies of power, equality, and inequality, often shape the nature of teacher and student interactions in education settings in ways that can be inimical to student success. With respect to teacher-student interactions, Crockett (2017) argues that if students are to be better accommodated and engaged in their learning, educators need to identify, examine, and even change patterns of such interactions if they challenge successful attainment of educational goals.

Research shows that honoring student voice and allowing students to share in decision-making can contribute to higher levels of motivation (Ferguson et al., 2011). It is therefore necessary for educators to monitor and receive feedback on how learners are experiencing curriculum, including those that are designed to promote technology use. Additionally, advocates of meaningful technology integration recognise that technological tools and student-centered practices are great avenues for student voice to gain a prominent place in the classroom. Given the important role that technology currently plays in education, if teachers are to use digital tools to attain successful learning outcomes, there must be an understanding that merely using technology does not guarantee learner engagement and motivation. It also does not ensure that learners will be transformed from passive consumers of knowledge to active creators and participants in their learning. In fact, researchers (Flory 2012; Jacobs 2012) have found that it is not the use of technology itself that increases student performance, engagement and academic motivation, but effective implementation of technology.

The study was conducted with postgraduate students pursuing a master's in education (M.Ed.) programme in Educational Technology at a university in Trinidad and Tobago. The M.Ed. programme in Educational Technology began in September 2014, and the course under study was delivered to the second cohort in September 2016. Like many institutions of higher learning, and especially those dedicated to teacher education, the programmes at this university recommend the use of learner-centered

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pedagogies that are sensitive to learner background, profile, and needs. However, the procedures to provide feedback to individual instructors on how learners experience the curriculum are limited and often available long after another iteration of the course has begun. Action research (AR) offered the possibility for immediate and more detailed feedback for revising course design and encouraging student input.

The study was designed to monitor and incorporate student voice in the design and delivery of a course in an M.Ed. program across cohorts and over time at a university with a stated commitment to learner-centered instruction. The inclusion of student voice in higher education can achieve transformational change (Freeman, 2014), address issues of democracy and student rights (McLeod, 2011), and provide students with opportunities to be co-developers of curriculum (Bovill et al., 2011). A study of student teachers conducted by Maloy and LaRoche (2017) found that the student teachers used the feedback from students to make changes to their instructional practice and reflect on their course content, methods and student thinking.

In addition, proponents for the inclusion of student voice in curriculum development view the issue as an opportunity to change the power structure in higher education and ensure that students are no longer silent on issues that directly affect them (Cook-Sather, 2006). The combination of student voice research and action research provide a powerful vehicle to improve curriculum at all levels of the education system. Action research has been used in several studies in higher education to make changes to the curriculum. One study of a teacher training program adopted AR as a democratic participatory approach to mentorship in a virtual and distributed situation (Gordon & Edwards, 2012); whilst another focused upon the incorporation of culturally relevant pedagogy into curricula to address emancipatory requirements (Hungerford-Kresser et al., 2014).

The purpose of the course is to explore various learning management systems (LMSs) and to use these platforms to develop online and blended courses. This M.Ed. in educational technology course is one of several options offered to teachers in the second cohort of the post-graduate program. Impetus for the study arose when a new instructor was assigned to teach seven of 21 students from the second cohort who signed up for the course. The instructor recognised that there was a level of student dissatisfaction with the course. Given that the University's learning, teaching, and assessment strategies emphasise student-centeredness,

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eliciting students' views on this issue was imperative. Although students at the University have the opportunity to evaluate their courses and instructors at the end of each semester through the Student Evaluation of Teaching (SEOT) system, statistics reveal consistently low participation. Often, feedback is obtained too late for significant changes to be made in response to students' opinions, concerns, and suggestions. In an effort to understand the nature of the dissatisfaction with the course, the study draws on the intersecting theories and practices of action research and student voice. This brings teacher educator inquiry and student voice into direct dialogue with possibilities for transformative and emancipatory outcomes for the teacher educator and students. There was an expectation, based on the literature on bridging theory and practice in education, that students would likewise incorporate the voices of their students when they infuse technology into their teaching at primary and secondary levels of the education system.

The Research Purpose

The purpose of the study was to determine whether incorporating student voices in the teaching and learning process could improve the design and delivery of an M.Ed. educational technology course, and also lead to increased levels of active engagement, satisfaction and participation. These were viewed as important features of pedagogy that is learner-centered, participatory, democratic, and inclusive. Additionally, the action research process was undertaken for the teacher educator to engage in individual professional development that could potentially influence systemic change at the University where educators frequently complain about a lack of student engagement and participation in their learning. Success in this project held the prospect of its use by teacher educators in other courses, and the potential to influence curriculum change in other courses and programs across the University. In the first instance, the instructor of the technology course expected that the study would yield valid data and results that could be used subsequently to review and revise the course in response to the feedback and recommendations of students. Such revision was expected to cover both content and delivery and thus increase student satisfaction with the curriculum. Additionally, sharing the results of the study with other teacher educators in the learning community at the University had the potential to inform ongoing discussions about students' active participation in their learning and make decision-making more data-driven.

Research questions

Student dissatisfaction raised concerns about the nature of students' experience of course content and delivery, and ways in which these could be improved. Engaging students in the process of curriculum design and review also seemed to be an ideal way to incorporate student voice, while simultaneously giving students the opportunity to practice what they had learned in curriculum courses. These considerations led to two broad research questions:

- How does the incorporation of student voice in the teaching and learning process improve the design and delivery of an M.Ed. educational technology course?
- How do students perceive the effectiveness of the strategies used to deliver the M.Ed. educational technology course?

Student voice was elicited with the following sub-questions:

1. To what extent is the course content meeting the anticipated needs of the students enrolled in the course?
2. What aspects of the course do students dislike?
3. What aspects of the course do students find enjoyable?
4. What suggestions do students have to enhance course delivery?

Literature Review

This review explores the key theoretical strands that underpin the study. It makes meaning of key concepts such as student voice, student voice and inclusion, and action research as a strategy for improvement of educational practice. Deeper expositions of these concepts are provided in the ensuing sub-sections.

Defining student voice

There are different dimensions of voice: literal, metaphorical, and political (Britzman, 1989). Taken literally, voice signifies the perspectives of an individual. In a metaphorical sense, voice focuses on the qualities and feelings communicated by the speaker's words; and politically, it represents the right to speak and be represented. The concept embodies the idea of students exercising a degree of control over circumstances and events in their learning environment, and taking opportunities to communicate on issues, activities or events that affect their learning

(Johnson, 1991). Students who participate in decision-making in relation to their school lives are more empowered than those who are constrained to the role of limited, passive learners in areas such as curriculum, school management and change, and teaching-learning outcomes (Harper, 2003). Mitra (2004) viewed student voice as an important component in student-teacher collaboration to attain educational outcomes through improvement in teaching, curriculum assessment, and teacher-student relationships. More recent definitions, such as those in McLeod (2011), and Quaglia and Corso (2014), promote the view that student voice should lead to greater empowerment. They also suggest that students seem to develop greater personal and social agency when they use their voice to collaborate with educators to influence changes in education systems. In this way, students become more involved in their own learning and in the enhancement of their learning environment.

It is perhaps helpful to view student voice activity as more process than product because it is not merely an act or an opportunity for students to give opinions. The need for educators to value student contribution genuinely and make strategic use of student feedback has been emphasised. Flynn (2017) stressed the importance of embedding a culture of listening, and the adoption of strategies to support sustainable structures and responses to student voices.

Student voice and inclusion

Diversity in student populations is a reality in educational institutions. While gains have been made in widening access to education for previously underserved groups, there remains the challenge of bringing access and equity closer together (Gordon, 2010). Diversity in educational practices is required to complement diversity in population and satisfy the needs of all learners. Gordon suggests that one way to achieve this is to increase the levels of communication, which, in turn, would provide more opportunities for students' perspectives to be included in the functioning of the education institution. Fielding (2015) also advocates for students to be active respondents and form a partnership with staff. He suggests that students should be invited to have dialogue and discussion with staff to deepen learning/professional decisions. In this approach students are discussants rather than recipients of current approaches thereby contributing to the development of teaching and learning in their school.

Flynn (2017) highlights the importance of including the voices of children with additional needs and ensuring that they are heard. In the Caribbean, there is also increasing focus on the inclusion of learners with special needs in the work of researchers such as Blackman (2011) and

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Blackman and Conrad, (2017). For all learners, whether or not they have special needs, the literature suggests that devising strategies to engage students in authentic, respectful ways acknowledges their expertise, empowers them, promotes meaningful participation and collaboration in the teaching-learning process, and has the potential to improve students' experience of schooling (Flynn & Hayes, 2021).

Forsman's (2015) study of meaning-making and interaction in a course designed to promote student participation in roles as co-creators of course content and aims, concluded that greater levels of communication provide students with structure. She cautioned that dominant discourses of educators, risk excluding some perspectives when students' experiences and expectations are not considered as meaningful contributions to the development of educational practices.

Action research in education

Action research, according to Bryman (2008) is "an approach in which the action researcher and members of a social setting collaborate in the diagnosis of a problem and in the development of a solution based on the diagnosis" (p. 382). It is a form of systematic inquiry that often involves the collection of both qualitative and quantitative data (Bryman, 2008; Creswell, 2008; Mills, 2014), and is promoted because it involves the people who participate in the diagnosis and subsequent formulation of ways to address problems.

Action research is now established as an important tool for professional development in education (Grundy, 1995; James & Augustin, 2017), because it allows teachers to take on the role of researcher and to gather relevant evidence to inform their practice, as opposed to relying on advice from those who may not be as familiar with or sensitive to the teaching and learning context of their classrooms (Hubbard & Power, 2003). Reeves (2008) found that when teachers are given the opportunity to engage in action research on a sustained basis and in a collaborative environment, three things occur. The first is that there is often a direct and measurable impact on student achievement, behaviour and educational equity. In addition, teacher researchers affect the professional practices of their colleagues. A third, related impact is the ripple effect created as successful professional practices are reinforced and repeated by both the teacher researcher and those teachers who are influenced by them. Therefore, action research can result in teachers' "sense of professional role and identity" (Lankshear & Knobel, 2004 p. 4), and the improvement

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of teaching quality and practices. This research involved what Creswell (2008) described as practical (as opposed to participatory) action research. In this respect, the action research process focused on teacher and course development and involved individual and student-based inquiry.

Methodology

Research Design

This action research was conducted using McKernan's spiral model (McKernan, 1991). McKernan's spiral model is a form of scientific inquiry (McKernan, 1988), which meets Lewin's four original action research phases: plan, act, observe and reflect (Lewin, 1948). McKernan adds a spiral flow that allows researchers to reflect on and redesign their action research project. This provides an opportunity for the action researcher to repeat the phases via a new action cycle and bring additional elements into the study. For this study, the first phase was the planning phase. It was conducted from August 2016 to September 2016, before the beginning of the first term of the 2016/2017 academic year. During this phase, the course outline was reviewed and adjusted; content was added and deleted as necessary, and the suggested teaching strategies were included in the course outline. The lectures were developed in line with the requirements of the course outline.

The first phase (Part A) investigated the students' perceptions of the M.Ed. course they had completed. Part A was completed during the first term from September 2016 until November 2016, when first term teaching formally ended. Data were collected from the entire class of seven students who signed up for the course via face-to-face interviews, a focus group interview and the student evaluation of teaching (SEOT) survey. The views of all students were sought in the following areas: delivery method, enjoyment, breadth and balance of the course, manageability, relevance and assessment methods. However, student participation was voluntary. They were told that the aim of the project was to engage them in the process of curriculum design and delivery in order to improve the experience of successive groups of learners, thereby enhancing their chances of success. It also served to strengthen instructor effectiveness and professional practice. Based on the analysis of the data collected, changes were made to the course outline for the M.Ed. course in terms of course content, assessment and teaching strategies.

The second and third phases in the research, namely action and observation, were completed after the analysis of the data. The reflection phase took place during the break between the two academic terms. Based

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on the findings from the data collected from one cohort, a revised design of the course outline emerged during the reflection phase. The second cycle of the action research began with the formation of the revised course outline and teaching strategies. The revised plan was implemented (action and observation) during the first term, from September 2017 until November 2017 when first term teaching formally ended for this cohort.

In the second phase (Part B) the course was delivered using the revised course outline, assessment, and teaching strategies, to the 11 students who signed up for the course out of 21 students in the third cohort in the M.Ed. program. Data were collected using the same data collection tools used in first phase (Part A). The three methods of data collection which allowed for triangulation of the data were face-to-face interviews, a focus group interview, and the student evaluation of teaching (SEOT) survey, which occurred after the course was delivered. Then followed the reflection of the second cycle during the period December 2017 to February 2018 when data from both terms were gathered and results presented.

Findings

The research was guided by two broad research questions:

1. How does the incorporation of student voice in the teaching and learning process improve the design and delivery of an M. Ed. educational technology course?
2. How do students perceive the effectiveness of the strategies used to deliver the M. Ed. educational technology course?

Four sub-questions were used to elicit student voices and generate answers to the broad questions, and these are first presented below.

Research sub question 1: To what extent is the course content meeting the anticipated needs of the students enrolled in the course?

The analysis of the data for the first phase of data collection using face-to-face interviews and the focus group interview suggested that there were several areas of discontent with the course. Students found that the course had too much content, discussions, and assignments. For example, five out of the seven students who participated in the face-to-face interviews indicated that the course contained too much content which caused them to become overwhelmed. Additionally, they did not fully understand the content. Some of the verbatim comments were as follows:

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Researcher: Do you believe that the content was relevant to your needs?

“While it [content] may be relevant I believe that there was too much content. This made it difficult for me to be able to really get a good understanding of the content. I felt I was just skimming through and not really developing the skills.”

“I believe that a major part of the content can be removed. More focus should have been placed on the actual development of courses using CANVAS. There was too much to take in during each lecture.”

“There was too much content. While the content may be beneficial for someone who wants to become an instructional designer, I believe that the content should be tailored to the needs of the students in the class. Many of whom are teachers.”

The other two students (2/7) believed that the course content was adequate and relevant to the course.

The data collected from the focus group interviews corroborated the findings from the face-to-face interview. All seven (7/7) students participated in the focus group interview. The perception that the course content was too expansive was affirmed by all students. Some verbatim comments were:

“Too much content. As a primary school teacher, I don’t see the need for learning about purchasing an LMS or the other stakeholders’ involvement with an LMS in your school. Also, the number of LMS packages that were taught in this course could be reduced.”

“The content was too extensive. Perhaps less theory about LMS and a more in-depth focus on CANVAS.”

“Less content and assessments would make this course more student friendly.”

Researcher: What aspects of the course do students dislike?

The analysis of the data suggested that more than one half of the students (5/7) disliked the number of assessments, discussions, and the large amount of content in the course. Some comments that were made in the face-to-face interviews that supported this assertion were:

“Before I could learn how to use one LMS properly, I had to move onto another LMS. Also, there were too many assignments and discussions.”

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“There were too many discussions. Some of the topics were not relevant to what we were doing. Writing and responding to the discussions took a very long time.”

“The course content, the number of assessments and the number of discussions were too much for one semester.”

“Too much assessments, content, discussions and in-class activities.”

“There were too many small assessments in this course. It was almost like every week an assignment was due.”

The responses from the focus group interview again supported what was said by the students during the face-to-face interviews: The responses were as follows:

“There were too many discussions. Ad hoc topics used for discussions”

“Yes, I agree. Also, the content was too much. It was difficult to get so much work down in such a short period.”

“I believe that the blended method of course delivery was not suited for this course. We had to do too much of the work on our own. It created a lot of stress for me.”

Researcher: What aspects of the course do students find enjoyable?

While students pointed out several difficulties with the course, they were able to identify a few things that were positive about the course. All seven students who were interviewed suggested that the course was beneficial to their program of study and enjoyed the interactive nature of the course. Some of the comments from the face-to-face interviews were:

“Learning about the different types of learning management systems was interesting for me. I hope to work as an instructional designer some time and the experience was valuable.”

“I guess the blended approach was one positive thing about the course. It allowed me to see how I can use an LMS in my teaching.”

“Working with different LMSs helped me to see the strengths and weaknesses of the different types of LMSs.”

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The responses during the focus group interview supported the comments in the face-to-face interviews. Some verbatim responses were as follows:

“I enjoyed the way the course was delivered. The blended approach allowed for a lot of interaction during our face-to-face class sessions.”

“The blended approach of course delivery worked for me. The mix of face-to-face and online classes allowed me to see how a LMS can be implemented.”

“The interactions in the classroom.”

“Understanding how I can use an LMS in my teaching.”

“Very little.”

Researcher: What suggestions do students have to enhance course delivery?

Students suggested several changes to the course during the face-to-face interviews. These changes included a reduction of course content, assignments, and discussions. The following are some participants' responses:

“The number of LMS packages that were taught in this course could be reduced. Also, the CANVAS software should be made available to students so that they could develop their skills on their own time.”

“There were too many assignments and discussions. The discussions could be reduced by a half and the amount of small assignments could also be reduced. This would give us more time to work on the big project.”

“This entire course should be re-written.”

The focus group interviews corroborated the students' sentiments with respect to the changes that should be made to the course. Some of the verbatim responses follow:

“Reduce the number of assignments. Reduce the number of discussions. More group presentations instead of individual presentations. More online classes.”

“The course is too general. Focus on one LMS and remove some of the assignments.”

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“This course can be improved by reducing the amount of assignments or remove the final assignment and grade students on a number of smaller assignments.”

“This course involves the use of several LMS software. Only certain features were taught in each package. Perhaps there should have been a more in-depth use of one or two of the LMSs.”

Analysis of the data gathered indicated that several improvements were required and at this stage the incorporation of student voices led to curricular design and delivery. Students suggested that the course could be enhanced if there were changes to the content, delivery methods, number of assessments, and time to complete assignments. It was clear that the students had perceptive and constructive insights on their learning experiences, and aspects of the course needed to be modified to improve the effectiveness of strategies to meet their needs.

Eliciting the views of students was helpful in amending the course outline and method of course delivery for the third cohort of students. Some of the changes included an equal amount of online and face-to-face classes, reduction of the course outline in some areas to make it more relevant to the needs of students, and a deeper focus on three LMS systems. In addition, the number of assignments was reduced, and a more focused alignment between online discussions and classroom activities was introduced. This course was delivered from September to December 2017 to 11 students. Data were collected from the students at the end of the course using the same methods as were used for the previous cohort. A total of eight out of the eleven students in the course volunteered to participate in the face-to-face interviews and all students (11/11) participated in the focus group interview. However only four out of 11 students completed the SEOT survey. The analysis of the data showed that there was a major shift in the students' comments when compared with the previous cohort. Some of the comments from the face-to-face and focus group interviews are provided verbatim below. The lead questions of the interviewer are in bold.

Second Phase (Part B): After Intervention

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Researcher: Do you believe that the content was relevant to your needs?

“I was able to learn so much about the implementing a course on an LMS and exploring the different systems. I also learnt how I can use software to develop content that can be placed in an LMS.”

“The content is relevant to the needs of anyone who wants design, build and teach using a blended or online course.”

“The course provided me with the skills to design and build online and blended courses. I think the content was wide enough because it covered many aspects of LMSs. It also allowed us to work on three different LMSs.”

The response from the focus group interview reiterated what the students said in the face-to-face interviews. Some of the verbatim comments are as follows:

“The content is very relevant to what is happening in the tertiary level. It provides an avenue for employment in tertiary educational institutions who may be providing online and blended courses.”

“The course showed me various LMSs and how to use it. Through the content of this course, I was able to learn more features of the LMSs. I was able to understand the link between LMS use and its capabilities in Trinidad and Tobago.”

“The content was relevant to the M. Ed. Degree. It was very informative and I learnt quite a lot.”

“Everything, I can see value in everything I learned in this course, it covered a wide range of content that I can use in the future”.

Researcher: What aspects of the course do students dislike?

Although the course was adjusted based on the comments of the previous cohort 3 out of the 8 students who participated in the interview indicated some areas of dissatisfaction with the course. Some of the comments were as follows:

“We touched on the three LMS to do course work. I believe that students should have been given a choice to choose their favorite LMS to do the final project.”

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“I found it difficult to write an essay on LMS given the length of the other projects.”

“The discussions take a very long time to respond to. There should be less discussions.”

The responses from the focus group interview indicated less dissatisfaction with the course. Some of the comments were:

“I believe that we needed more time to interact with the different LMSs. There needs to be a follow up course.”

“Too many discussions. It takes time to respond to the original thread and then to respond to the comments of two colleagues.”

Researcher: What aspects of the course do students find enjoyable?

The comments on the aspects of the course that students found enjoyable were significantly improved from the previous cohort. There were a lot more positive comments about the course. Some of the verbatim comments were:

“I like the fact that it was very practical.”

“I found that the assessments aligned really well with the objectives of the course. The assessments were really well organised and I like the fact that it was mixed with the essays, discussions and the practical aspects.”

“I am quite pleased with this course in terms of the instructor, strategies used, assessment strategies and interactivity. I believe the course fulfilled its purpose in the program. I learnt quite a lot about LMSs.”

The comments from the focus group interview reinforced what was said in the face-to-face interviews. Students related significant, positive aspects of the course. Some responses included the following:

“In addition, the discussions assisted with the theoretical and practical assignments.”

“I particularly liked the discussions. I found they were practical I liked how you related it back to the practical. You made the discussion practical.”

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“This course taught me a lot on how I can build an entire course online using an LMS and other software tools.”

Researcher: What recommendations would you suggest to make this a better course?

There were significantly less recommendations for improvement for the course. Most students reported that they were generally satisfied with the course and offered no comments on improvements. Some verbatim comments were as follows:

“I think the course was well delivered and the content was very relevant. Perhaps there could be some more practical sessions in class with the CANVAS LMS.”

“I can’t recommend any changes at this point. Everything we learnt was relevant. I gained a lot of knowledge and skills in the area of LMSs.”

“The strategies were well utilised where the lecturer ensured we interacted with the LMSs while learning about its history and features.”

“There are people who are not tech savvy. So we need a session to help them with issues.”

These statements from the face-to-face interviews were supported by data from the focus group interview. The following are some of the comments.

“I believe we covered a lot of content that made us very knowledgeable in the application of LMSs in education. This is a very good course. No changes required at this point in time.”

“I would like to suggest that the number of discussions be reduced and more time be allocated for the completion of the final project.”

“I agree. In addition, perhaps the course can only deal with the features of one LMS such as CANVAS. This would allow us to delve into that LMS in greater depth.”

Additionally, the comparison of those data from the student evaluation of teaching (SEOT) showed similar comments and an overall improvement in students’ perceptions of the course. The SEOT overall score out of a total of 5 points for the third cohort (second phase) was 4.4,

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while the SEOT for the second cohort (first phase) was 4.0. This showed an overall improvement of .4 points. A preliminary analysis of those data suggests that the amendments made based on student voice input resulted in an improved course and a more satisfactory learning experience for students. The entire action research process across cohorts therefore demonstrated how student voice can be incorporated in the teaching and learning process to improve course design. The largely negative student perceptions of the content and strategies in the technology course by the second cohort led to adjustment in the design and improved student satisfaction for the successive cohort. The responses of the second cohort allowed the instructor the opportunity to critically assess the course to determine if further refinement was necessary.

Discussion

The findings of this study supported student voice as a valuable improvement tool, and a powerful stimulus for teacher reflection. This is corroborated by Maloy and LaRoche (2017) who also found that teachers used the feedback from students to make changes to their instructional practice and reflect on their course content, methods, and student thinking.

Student voice informed the teacher educator about the effectiveness of the course outline, practice, and specific areas for future professional learning course management enhancement. Additionally, it enabled a dialogue around teaching and learning in the classroom and gave the teacher educator insights into the unique challenges experienced by students. Dialogue between educators and students to improve student engagement and satisfaction as expressed by participants in this study, provide a foundation to build a culture of listening and sustainable structures in educational settings to respond to student voices as advocated in Flynn (2017) and Blackman (2011).

Additionally, the results illuminated important dimensions that are relevant to tertiary level teaching institutions. The first is that it acknowledges and gives greater agency to adult, post-graduate learners who possess knowledge and experience of a teaching-learning environment.

With respect to the political, in our survey of the literature defining student voice, we referenced Britzman (1989) who identified the political as one dimension of 'voice'. She further argued that politically the concept encompasses the right to speak and be represented. Procedures such as

those employed in this action research project draw on learners' perspectives and input for curriculum change in a real context. The intervention employed different strategies and accommodated negative and positive feedback to review and revise course content, teaching-learning strategies, and assessment, thereby creating a space for the voice of learners to be heard in a meaningful way to improve the nature of the learning environment. The process of integrating both voices, educators and students, is sometimes regarded as discordant and time-consuming. This view reflects philosophical differences that underpin contrasting orientations to curriculum. Miller and Seller (1990) assert that educators who view curriculum as transmission are more likely to adopt subject-centered, less student-centered approaches to curriculum design. From this perspective, instructors are primarily responsible for curricular content and enactment. On the other hand, more liberal views of curriculum design are associated with perspectives of curriculum as transformation. This contrast is important because transformative approaches allow for greater participation of all stakeholders in the education process; in this case, more mature and experienced students in higher education. As the results of this study demonstrated, incorporating students voice and attaining appropriate course goals and learning outcomes are not necessarily mutually exclusive. In fact, learning outcomes are actually enhanced when students are motivated and have contributed to course design. Thus, the attainment of course goals and learning outcomes does not necessarily mean that the voice of learners cannot be incorporated and negotiated in course design.

Implications, Recommendations, and Conclusion

This research has implications for action research and links theory and practice. The teaching experiences and student responses described could be used in teaching, influencing curriculum planning, and can also contribute to the body of knowledge on action research.

The voices of participants in this study suggest that the creation of a tertiary level learning environment that empowers student voice requires educators to explore a range of inclusive curricular practices and use their expertise to adapt strategies to suit their teaching context. Ladson-Billings (2014) advocates for teaching approaches that not only seek to empower students intellectually, but also socially, emotionally, and politically. This suggests that cultural responsiveness in a university's curriculum should go beyond inclusion of traditional artifacts associated with culture - the arts, food, and historical icons - and incorporate affective and political facets of interactions. In an education setting, these aspects are often

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overlooked in the drive towards academic knowledge transfer. However, they are important in the creation of a vibrant learning community that is marked by diversity.

We, the authors, propose that examining the role of student voice in curricular design and delivery using action research is one option that is available to educators who wish to adopt a more transformative approach for more inclusive and reflective teaching. Instructors should use feedback from students to engage in systematic reflection about their practice so that they can solve individual course issues and wider institutional problems. Traditional approaches that give educators exclusive rights to curriculum change and renewal, and total control over how the teaching and learning environment is constructed limit the engagement of students' perspectives and restrict their potential to be co-creators of the curriculum.

The research reported in this study suggests that educators do not need to wait for changes in official or organisational policy at the governance level to achieve change in their classrooms. Individual educators can implement action research and meaningfully use student input to change both content and implementation of courses to motivate and engage students in their learning and improve academic outcomes. The benefits do not end there. If the usefulness of student empowerment through participation in curriculum design is explicitly discussed in the classroom in a teacher education institution, there is a reasonable expectation that prospective and practicing teachers would have a greater understanding and commitment to respect and include student voice in their own classrooms at the primary and secondary levels. If this is done in a significant number of classrooms, it can raise and improve the level of classroom interaction, thereby making the learning environment more empowering.

Crockett (2017) raised the issue of student-educator interactions that are influenced by tacit cultural ideas about equality and inequality, and he suggested that these should be identified, examined, and even changed. Similarly, Fullan's (1993) call for a re-culturing of traditional education positions and practices, though made with specific reference to assessment, are equally applicable to curriculum innovations that aim to transform traditional patterns in education in instances where the voice of students is muted or non-existent. Studies that utilise action research can reveal how successful educators are in designing learning environments in which students feel empowered, and believe that their opinion is valued.

Adopting this approach holds possibilities for breaking down authoritarian education systems wherever they exist.

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