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# Assessing Concerns and Leading Pedagogical Innovation in Higher Education: A Case Study of the Arthur Lok Jack Graduate School of Business


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# ASSESSING CONCERNS AND LEADING PEDAGOGICAL INNOVATION IN HIGHER EDUCATION: A CASE STUDY

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**Abstract:** *Studies of pedagogical innovation indicate that the implementation process is enhanced by addressing teachers' concerns. Institutions address teacher preparedness mainly from the perspectives of their preparation and institutional support, without recognizing teachers' mental state and particular implementation concerns. This paper adopts the Concerns Based Adoption Model (CBAM) to examine the Stages of Concern (SoC) of faculty involved in the implementation of pedagogical reform. The standardized 35-item SoC questionnaire was sent online to 152 faculty members and 31 responses were obtained. The study found the faculty body had high levels of self-concerns, low levels of impact concerns and a willingness to continue with the implementation process. The study addressed the theoretical gap in teacher preparedness research by combining the SoC with contextual factors.*

Implementation of education innovation is usually complex and requires consideration of factors such as people, leadership and culture (Hall & Hord, 2015). In relation to people, the importance of teachers' perceptions and concerns in the implementation of curriculum innovation has been established (Guskey, 1988; Houston, 1990; Senger, 1998). Further, it is recognized that teachers' state of preparedness, based on capabilities, including their knowledge, skills and attitudes, positively affects the implementation of innovation (Paryono & Quito, 2010; Mahmud & Ismail, 2010). It may therefore be assumed that the preparedness of teachers will influence and shape their perceptions and concerns regarding curriculum innovation. This study explores the relationship between preparedness, concerns and implementation of innovation and makes recommendations for improving teacher preparedness in the implementation of curriculum innovation in higher education.

Studies of implementation of innovation have investigated teacher preparedness and concerns separately, without linking both constructs in a single model. For example, Inan and Lowther (2010), in a study of teachers' integration of laptops in their pedagogical practices in K-12 schools, examined teacher preparedness based on institutional factors such as support for school technology, technical support, and professional development. Steele, Brew, Rees and Ibrahim-Khan (2013) also emphasized the preparedness of pre-service teachers of science and mathematics by focusing their study on the teachers' background experiences, and their attitudes toward these subjects. Another study conducted by Alazzam, Bakar, Hamzah and Asimiran (2012) examined the preparedness of technical and vocational teachers in Malaysia, considering demographic characteristics, educational background, and supporting ICT factors. In like manner, studies of concerns have limited their understanding of implementation by delimiting the research to only concern factors. Lau and Shiu (2008) studied teachers' concerns regarding the use of pair work in a large-scale oral assessment. Yang and Huang (2008) also considered the issue of concerns in their assessment of high school English teachers' behavior in integrating information technology into English instruction. Teachers' concerns are recognized in the literature as an important predictor of the implementation of innovation in educational institutions and other settings (Hall, 2015). Ultimately, how teachers feel about and perceive a change, will in large part, determine whether or not change actually occurs in the classroom (Aihi, 2011). Teachers' concerns often present barriers to the adoption of innovation and researchers have found that the adoption of pedagogical innovation is a process of change that is facilitated by addressing the concerns of teachers (Brownell & Tanner, 2012; Hall & Hord, 1987). It is important to understand what types of interventions lead to the arousal of a concern and what types of interventions lead to the resolution of concerns (Hall, 2013; Hall, George & Rutherford, 1977). Fuller (1969) hypothesized that arousal of a concern is an affective experience whereas the resolution of a

concern is more of a cognitive task. This study addresses the theoretical gap by recognizing the importance of both concerns and preparedness to the implementation process.

This study of the implementation of the Authentic Teaching and Learning innovation (Herrington & Herrington, 2008) was conducted at a business school in the Caribbean. The school introduced a philosophy of authenticity into the teaching-learning process to address the demand of stakeholders for a work-ready employee at the graduate level. The Authentic Teaching and Learning approach was a pedagogical innovation introduced in 2011 to address the issue of workplace relevance and, four years following its introduction, the school commissioned a study to determine to what extent it had directly addressed the concerns of faculty and facilitated the implementation process. The Authentic Teaching and Learning innovation comprised the introduction of teaching and learning methods that allowed students to address complex problems in business (Eseryel, Ifenthaler & Ge, 2013), develop comfort with integrated experiences (Reising & Dale, 2017) and reduce the psychological distance between work and learnings from the business school.

The study used the standardized Concerns-Based Adoption Model (CBAM) to examine the Stages of Concern (SoC) of faculty members. The SoC addresses concerns regarding the implementation of education innovation and concludes that concerns occur in stages and are of various types and intensities (Hall et al., 1977). In addition, the SoC allows for the creation of user profiles which aids in planning for implementation support (Hall et al., 1977). In this study, two major characteristics of the faculty body were considered in the analysis of faculty concerns and creation of profiles: years of experience and contractual status. The study then examined the stages of concern in relation to faculty members' opinions regarding the existing gap in their preparedness for implementation. The findings of this study, which address both the concerns and preparedness constructs, will be used to guide school administrators to refine the institutional support mechanisms for the Authentic Teaching and Learning innovation. This will further provide faculty members with insights into their personal preparedness to progress along the implementation continuum.

The overarching research question that guided the study was: "How can the institution be more targeted in its support to faculty and improve the implementation of the Authentic Teaching and Learning innovation?" The sub-questions to address the broad research question were:

1. What are the Stages of Concern of the faculty body with respect to the Authentic Teaching and Learning Model?
2. Is there any significant difference in the Stages-of-Concern profile of the faculty body based on faculty characteristics?
3. What interventions are suggested based on the Stages of Concern of the faculty body?

This paper commences with a description of the Authentic Teaching and Learning innovation in the context. It then proceeds with an examination of the literature on the CBAM to derive relevant hypotheses in the context. The methodology is then outlined after which findings and discussions are presented. The paper ends with conclusions, implications and recommendations.

## **Authentic Teaching and Learning: The Innovation**

Many researchers have posited that what is taught in business schools is not relevant to the workplace (Clinebell & Clinebell, 2008; Moldoveanu & Martin, 2008). Some business schools have responded to this challenge by introducing authentic learning; an educational philosophy that places students at the center of the learning experience to solve authentic problems that mirror real work demands. Its educational goals are to develop students in acquiring integrated knowledge as well as self-directed learning, problem-solving and teamwork skills (Reising & Dale, 2017). It promotes a culture of active enquiry and includes classroom strategies that are increasingly representative of real world events (Herrington & Herrington, 2008). Authentic learning typically "focuses on real-world, complex problems and their solutions, using role-playing exercises, problem-based activities, case studies, and participation in virtual communities of practice. The learning environments are inherently multidisciplinary" (Lombardi, 2007, p. 2).

The Authentic Teaching and Learning Model is a pedagogical innovation at a business school; the setting for the study. While the school traditionally used pedagogies similar to those included in authentic teaching and learning, such as case studies and presentations by successful professionals, the business community held the view that graduates were not workplace ready. Previous efforts of the school to promote real-life learning were thwarted by faculty members' disposition to teach based on their own learning experiences. There was therefore a need to introduce more field-based, authentic applications such as simulations, problem-based learning, real-life business

projects and other teaching-learning pedagogies that mirror workplace realities. In the new model, faculty were expected to move beyond broad pedagogies of engagement and give primacy to real world complex problems which businesses face, embracing various forms of knowledge that reflect scientific rigor and practical relevance, and linking hard and soft skills (Bennis & O'Toole, 2005). Implementation of the model was expected to yield benefits for students, the school and society. These included greater comfort with the application of business principles leading to engagement in business activities, positive risk-taking behavior and ultimately value creation in the wider environment.

The implementation of the Authentic Teaching and Learning Model was supported by administrative activities including faculty training, orientation of students towards authentic teaching and learning, and the use of monitoring and reporting instruments to assess the rate of adoption of the innovation. While the supporting mechanisms did address the preparedness of faculty members to some extent and led to a general acceptance of the model, there is now a need to explore to what extent faculty members are comfortable with the pedagogy and how the school can advance implementation of the innovation.

## Literature Review

### *The Concerns-Based Adoption Model (CBAM)*

The Concerns-Based Adoption Model is a widely used framework in the study of the adoption of innovations and provided a theoretical lens from which to pursue this study of faculty implementation of authentic teaching and learning. The Concerns-Based Adoption Model (CBAM) focuses on how teachers, administrators, and policy makers respond to change (Hall & Hord, 1987; Loucks-Horsley & Stiegelbauer, 1991). CBAM includes three diagnostic dimensions (Hall, 2013; Hall & Hord, 2001):

- Stages of Concern (SoC), which addresses the personal issues faced by implementers;
- Levels of Use (LoU), which describe the behavioral profiles of users and non-users; and
- Innovation Configurations (IC), which represent the possible forms of the change that can be assessed against the intentions of the designers of the innovation.

Each of the three dimensions represents a distinct way of assessing the change processes and the measures in each construct have sufficient validity and reliability to be applied at the individual level and aggregated to represent the state of subgroups (Hall, 2013).

The Stages of Concern (SoC) dimension describes the perceptions and emotions of people as they engage in a change process. It was developed from the seminal work of Frances Fuller who found that teachers with different levels of experience have different kinds of concerns about teaching. Fuller (1969) originally conceptualized a two-stage developmental model of concerns: benefits to self and benefits to pupils. Self-concerns involved factors such as personal adequacy and teacher efficacy whereas pupil concerns focused on the learning and progress of the students. The two-stage model was later refined by Fuller, Parsons and Watkins (1973) to a three-stage model that included task concerns such as concerns about teaching methods and teaching performance. Hall (1979) expanded the three-stage model of self, task and impact concerns into a seven-stage model that increased the sensitivity of the model.

The SoC identifies seven levels, through which teachers progress as they adapt and collaborate in the implementation of new innovations. The seven stages of concern, as outlined by George, Hall, and Stiegelbauer (2006), are unconcerned, informational, personal concerns, management, consequences, collaboration and refocusing. The seven stages of the SoC correspond to Fuller's three-stage model and the correspondence is demonstrated in the Stages of Concern model (Figure 1).

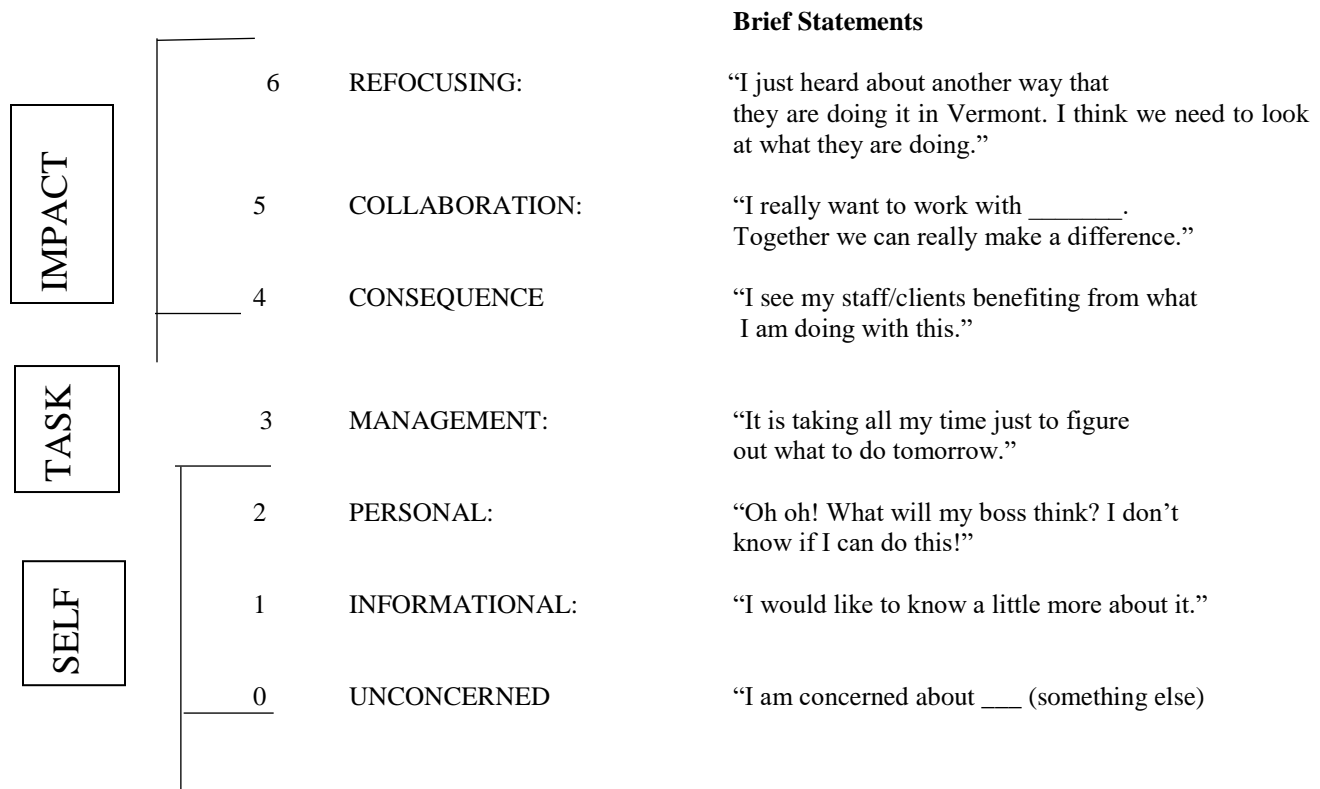


Figure 1. Stages of Concern  
(Source: Reproduced with permission from Hall, 2013, p. 268)

The SoC recognizes that change is a personal experience and people have different feelings and perceptions over time (Hall, 2013) and that the progression of concerns through the seven stages is developmental in nature (Fuller, 1969; Hall & Hord, 1987). The concerns profile of an individual therefore changes in time with continued use of the innovation. For example, an individual at the early stages of implementation may have a SoC profile with high scores at the informational and personal stages, thereby indicating a need for more knowledge about the innovation and an understanding of how the innovation will impact them personally. At a later stage, and with continued use of the innovation, the SoC profile may change to reflect high scores at the management stage. In this case, there is need for a greater understanding of how to operationalize the innovation and ensure it fits into his or her routine. The CBAM also recognizes that, although concerns may shift from one stage to another, this does not mean that lower stage concerns have been alleviated (Willis, 1992). For example, both novice and experienced users may have high scores at the informational stage, thereby indicating a need for information but requiring different kinds of information about the innovation.

### *Stages of Concern (SoC) and Pedagogical Innovation*

The SoC in the CBAM model has proven to be a useful framework for explaining teachers' responses to change and providing guidance to those leading educational change (Cruz, 2014; Khoboli & O'Toole, 2012). In a study of teacher change in the implementation of active learning in Bangladesh, Park (2012) highlighted the importance of teachers' prior experience, the context of innovation, as well as the presence of networks of teachers and support staff to the change process. In another study, Roach, Kratochwill, and Frank (2009) used the SoC to support the implementation of research-based practices in colleges and schools. The SoC is therefore a valid way to make claims about implementing pedagogical innovations. It is also a useful mechanism for assessing and addressing faculty or supply side preparedness, as well as other important contextual, demand side factors such as student preparedness for implementation of pedagogical innovation.

Demand side preparedness emanates from students' engagement, facilitated by knowledge of, and phased introduction to, the approach (Moust, van Berkel, & Schmidt, 2005) and by managing the tensions between competing agendas of employability and engagement (Millican, 2014). Where innovations such as problem-based

learning are used, students are more engaged and better able to apply their knowledge to novel real-world situations (Barrett & Moore, 2011; Schmidt, Van der Molen, te Winkel, & Wijnen, 2009). Supply side preparedness is related to two major factors; leadership that provides the relevant support infrastructure to address competency building, motivation and inspiration (Krasinskaia, 2012; McGeown, 1980) and the value internalization and commitment to change of individual faculty members (Badmus, 2007). Innovations such as problem-based learning experience challenges on both the demand and the supply side such as concerns about coverage of the curriculum through such methods and poor understanding of the underlying principles of the innovation (Moust et al., 2005). This study seeks to assess concerns in order to focus the support infrastructure on both the demand side and supply side concerns.

### *Faculty Characteristics and Concern for Innovation*

Fuller, Parsons, and Watkins (1973) found that teachers will continually experience concerns in all three stages to some extent, but the self-concerns will be strongest with inexperienced teachers. Only when self-concerns are adequately addressed do teachers begin to place more emphasis on task concerns. In a study of the adoption of mathematics in Cyprus, Christou, Eliophotou-Menon, and Philippou (2004) found that most teachers continued to have task concerns and that there were significant differences in the concerns of teachers based on years of experience, but not across years of implementation. The faculty body at the school which is the subject of this study, is comprised of members at various levels of experience and it is therefore expected that faculty with more experience will have higher levels of task concerns than their less experienced counterparts.

Another characteristic of faculty members that has revealed important differences in performance, pedagogy and professional involvement is their contractual status, whether full-time or part-time (adjunct). Studies with respect to the differences between full-time and adjunct faculty have yielded various results. Several studies report no significant difference between full-time and adjunct faculty with respect to performance as assessed by students (Landrum, 2009; Wollert & West, 2000). However, Leslie and Gappa (2002) noted that adjunct faculty tends to be more comfortable with traditional teaching practices. In terms of professional involvement of full-time and adjunct faculty, results are mixed. For example, Rifkin (1998), in a study of professional attitudes of community college faculty, found that compared to full-time faculty, adjunct faculty (a) exhibit less involvement in curriculum, instruction and scholarship; (b) perceive less autonomy from the institution; and (c) appear less responsible for institutional behavior. Conversely, Leslie and Gappa (2002) found relatively similar interests, attitudes and motives of both full-time and adjunct faculty. Since there is no conclusive evidence regarding the distinctions between full-time and adjunct faculty with respect to performance, pedagogy and professional involvement, it is important to examine the differences in concerns of full-time and adjunct faculty with respect to innovation. Adjunct faculty members at the school represent 87% of the total faculty body and the School has demonstrated high levels of student performance over time with a similar faculty profile. The implementation of the Authentic Teaching and Learning model requires a change in pedagogical practices and, as such, it is important to explore whether there are significant differences in the SoC profile of adjunct and full-time faculty. It is expected that there will be no significant difference in the SoC profile of adjunct and full-time faculty.

## **Methodology**

The standardized 35-item SoC questionnaire was sent online to one hundred and fifty-two (152) members of faculty on a mailing list and thirty-one (31) completed instruments were obtained (Appendix A). The instrument was pilot tested with nine (9) members of the administrative staff to determine clarity of the instrument and ease of completion. There were no reports of inconsistencies or ambiguity and the instrument was administered to the faculty group without any changes. Since the instrument has been tested and used in varying contexts (Hall, 2013) its validity and reliability is well established and was not re-examined in this study.

Two questions were added to define subgroups based on the faculty characteristics of years of teaching experience and contractual status. The researchers in this study are full-time faculty of the School and did not participate as respondents. A profile of characteristics of responding faculty members is presented in Table 1.

Variable		Number	Percentage
Years of Experience	0-5 years	12	39%
	6-10 years	8	26%
	11-15 years	3	1%
	More than 15 years	8	26%
Contractual Status	Full-time	6	19%
	Part-time	25	81%

As there is no fixed pedagogical protocol and configuration for every course, the mindset and personal comfort of each faculty member were considered most important for sustained and engaged implementation. As such, the Stages of Concern was the only diagnostic dimension of the CBAM employed in this study.

Respondents were required to rate each item using an 8-point Likert scale from 0 to 7 with 0 indicating “irrelevant”, 1 and 2 indicating “not true of me now”, 3,4, and 5 indicating “somewhat true of me now” and 6 and 7 indicating “very true of me now”. Each of the seven stages of concern was assessed by five (5) items on the questionnaire (Appendix B). The raw score for each stage of the scale was the sum of the five statements for that stage. Raw scores were then converted to percentile scores based on a table provided by the CBAM online administrator. The percentile scores were plotted on the graph to create the SoC profile.

The MANOVA test was conducted to address the differences in the SoC profile across faculty characteristics. In the analysis, the SoC constructs were used as the dependent variables and the faculty characteristics (contractual status and experience) as the fixed factors. Prior to the test, data were screened to ensure that the assumptions of MANOVA were fulfilled. SoC constructs grouped with faculty characteristics were drawn in boxplot diagrams and none of the SoC values were found in the extreme category. To examine multivariate normality of the dependent variables, SoC characteristics in each group of faculty characteristics, were presented in a pairwise scatter matrix diagram. Visually, elliptical shapes emerged in most cases and, hence, no transformation was done. MANOVA provided the benefit of studying a group of categorical and numerical variables simultaneously, thereby overcoming the problem of common method variance as there was no cognitive influence of the respondent on the two variable sets.

The research methodology also included a focus group which was conducted with nine (9) members of the faculty body, comprising full-time and adjunct faculty members. The focus group was introduced to the constructs in CBAM but was not provided with any information on the SoC profile of the faculty to prevent possible bias. The group was guided to respond to the question: “What is important to alleviate your concerns about the authentic teaching and learning approach?” The responses of the focus group were coded using content analysis and classified into supply and demand side preparedness in the case by variable matrix (Bernard & Bernard, 2013).

## Findings and Discussion

The findings of the study based on the research questions are presented in the sub-sections that follow.

1. What are the Stages of Concern of the faculty body with respect to the Authentic Teaching and Learning Model?

The percentile scores for the seven SoCs for the entire sample are presented in Table 2 and are also represented visually in Figure 2.

Table 2. Percentile Scores for SoCs of Total Sample

Stage 0	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5	Stage 6
61%	63%	70%	43%	33%	40%	26%

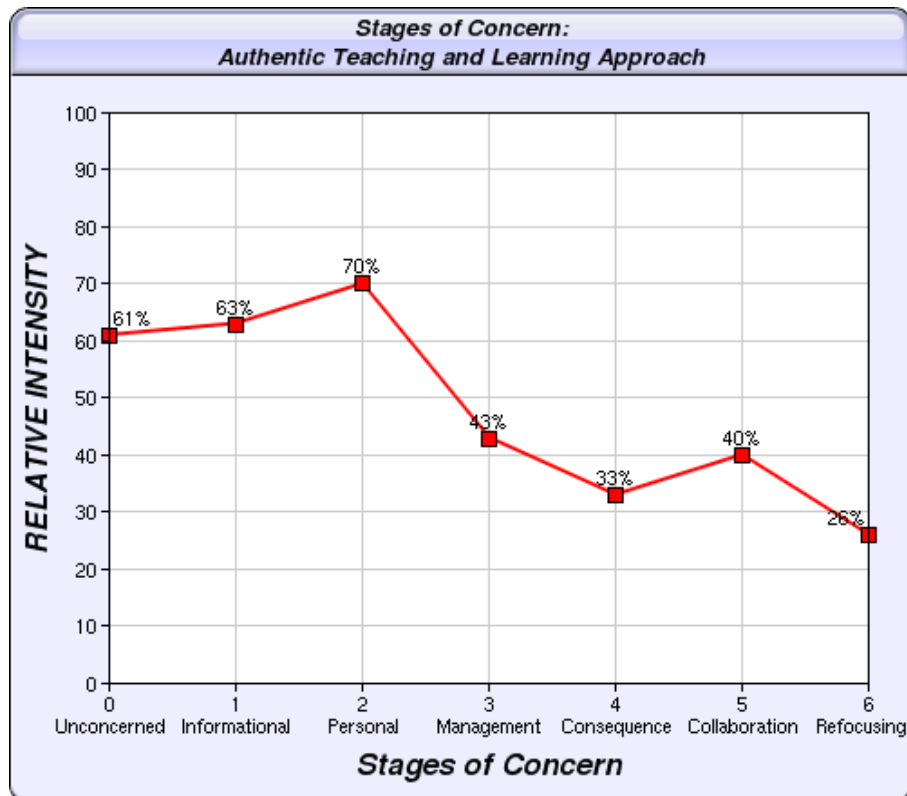


Figure 2. SoC Profile for the Total Sample

Scores are considered high when they are at or above the 75<sup>th</sup> percentile (Lau & Shiu, 2008). Accordingly, there were no high scores in the profile of the sample. Scores were highest at Stage 2 (Personal) followed by Stage 1 (Informational) and Stage 0 (Unconcerned). Stages 0, 1, and 2, which represent self-concerns, were the highest and close to each other, differing with a range of 9 percentile points. This indicated that faculty were generally interested in obtaining more information relative to authentic strategies and their role in the implementation process. There was a marked drop in the intensity of concerns at Stage 3—or task concerns—where the percentile score fell 28 points to 43 percentile points. This indicated that faculty were less worried about their ability to master the skills and use authentic strategies in their teaching. Stages 4, 5 and 6, representing the impact concerns, were relatively low with the lowest intensity of concerns observed at Stage 6 with 26 percentile points. This profile is described as a typical non-user profile by Hall et al. (1977). The decline of 14 percentile points between Stages 5 and 6 in a non-user profile is described as a low “tailing down” and indicates that there was no resistance to the innovation and therefore implementation could be improved by relevant support mechanisms. The overall profile was considered positive and suggests that faculty were interested in the Authentic Teaching and Learning innovation. They wanted to obtain more information about the innovation, but were not overly concerned about it. It also suggests that they were confident that the teaching strategies they currently used were authentic and, as such, were aligned rather than competitive with the Authentic Teaching and Learning innovation. They therefore did not threaten the progress of the innovation but required more information to understand what else would enhance their execution.

2. Is there any significant difference in the Stages of Concern profile of the faculty body based on faculty characteristics?

The results for the subgroups “contractual status” and “years of experience” are presented in Figure 3 and Figure 4 respectively.



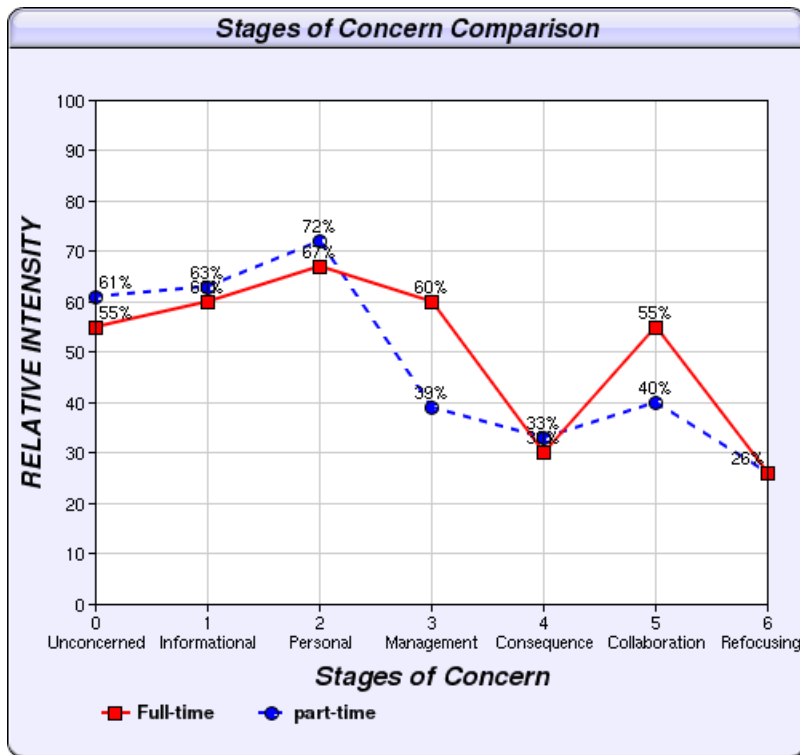


Figure 3. Stages of Concern by Contractual Status

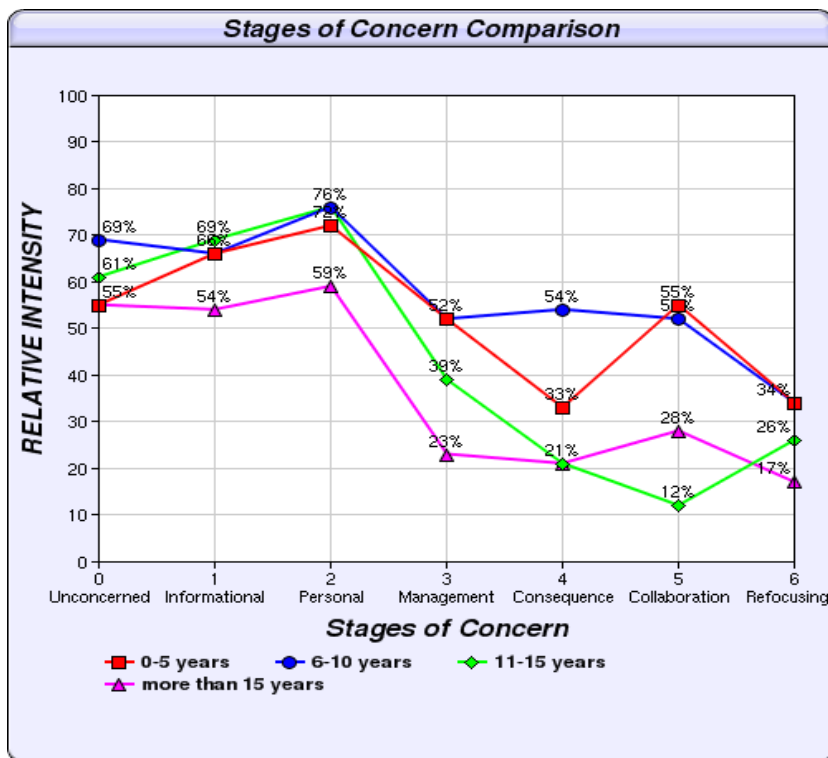


Figure 4. Stages of Concern by Years of Experience

The SoC profiles in figures 3 and 4 are similar to the overall SoC profile of the sample, except for a “tailing up” effect observed with faculty with 11-15 years of experience. This suggests that faculty members in this group were inclined to replace the Authentic Teaching and Learning innovation with strategies they considered to be more useful. It is therefore important to make clear the further benefits of the innovation to their particular disciplines.

The data was further examined to determine whether there were any significant differences across the two faculty characteristics considered in the study. The results are presented in Table 3.

Table 3. MANOVA Tests on SoC Profile

Effect	Model	F	Sig.
Contractual Status	Pillai's Trace	0.883	0.539
	Wilk's Lambda	0.883	0.539
Experience	Pillai's Trace	1.381	0.165
	Wilk's Lambda	1.366	0.180
Interaction (Contractual Status x Experience)	Pillai's Trace	1.719	0.092*
	Wilk's Lambda	1.698	0.100*

Note: \* significant at 10% level

Table 3 indicates that the SoC profiles did not show any significant differences across the two characteristics of the faculty members. For these effects, the observed significance levels for the two multivariate tests (Pillai's and Wilks') were large (greater than 0.05). However, the interaction effect of contractual status and experience (contractual status x experience) was significant at 10% level. Given that the “contractual status x experience” interaction was significant, a series of ANOVA tests (Table 4) was used to determine which of the seven SoCs were significantly affected by this interaction.

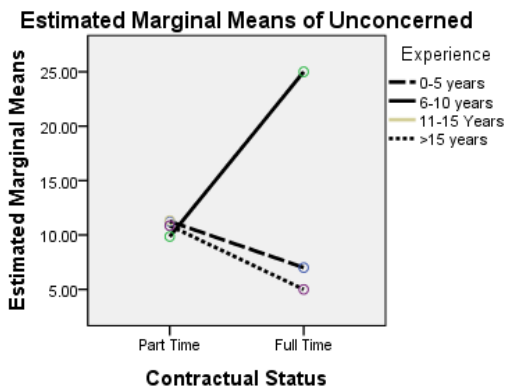
Table 4. Stages of Concern and Interaction

SoC Constructs	ANOVA	Part-Time				Full Time			
		0-5 yr	6-10 yr	11-15 yr	>15 yr	0-5 yr	6-10 yr	11-15 yr	>15 yr
Unconcerned	0.032*	11.3	9.9	11.3	10.9	7.0	25.0	-	5.0
Informational	0.295	17.3	19.0	19.0	14.9	19.8	7.0	-	9.0
Personal	0.338	19.4	22.0	21.3	16.9	22.3	10.0	-	9.0
Management	0.615	12.6	13.1	10.7	6.6	15.5	23.0	-	9.0
Consequence	0.347	20.5	26.4	17.3	18.4	23.3	18.0	-	8.0
Collaboration	0.006*	17.3	23.1	9.0	16.3	30.0	7.0	-	4.0
Refocusing	0.590	12.3	14.1	11.0	8.0	13.0	8.0	-	5.0

Note: \* Significant at 5% level

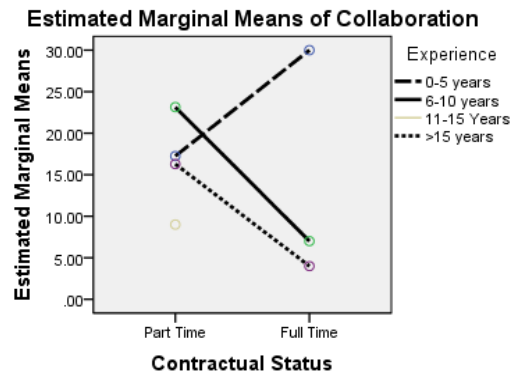
The results showed a significant “contractual status x experience” interaction effect for two of the seven stages of concerns, namely ‘Unconcerned’ and ‘Collaboration’ ( $p < 0.05$ ). Thus, the faculty members’ concerns at Stage 0 or ‘Unconcerned’ and Stage 1 or ‘Collaboration’ were dependent on the joint effects of their contractual status and work experience.

The interaction effect of contractual status and experience on the two significant SoCs, ‘Unconcerned’ and ‘Collaboration’, is presented in Figure 5.



Non-estimable means are not plotted

Figure 5 (a). Interaction Effects (Unconcerned)



Non-estimable means are not plotted

Figure 5 (b). Interaction Effects (Collaboration)

The interaction chart at Figure 5 (a) shows that, while all adjunct faculty with different levels of experience had the same level of ‘Unconcerned’, full-time faculty with 6-10 years of experience had a substantially higher level of ‘Unconcerned’. The mean raw score for the 6-10 year category was 25 as opposed to mean raw scores of 7 and 5 in the other experience categories. This suggests that faculty in this experience group, who had gained some confidence with their existing teaching and learning strategies were inclined to continue with their teaching methods. This conclusion was delimited by the low number of respondents in the full-time category (n=6) and further delimited by the fact that there was only one respondent in the interaction category. No useful conclusions could therefore be drawn from this finding.

The data on ‘Collaboration’ at Figure 5 (b) indicates that part-time faculty, irrespective of experience, demonstrated high concern for collaboration. On the other hand, only full-time faculty members in the 0-5 years’ experience category showed significantly high levels of concern for collaboration. This indicates that adjunct and full-time faculty with low levels of experience were interested in working together to explore authentic strategies.

### 3. What interventions are suggested based on the Stages of Concern Profile and Preparedness Barriers of the faculty body?

The researchers engaged the focus group to explore mechanisms and strategies that would alleviate the concerns of faculty regarding the Authentic Teaching and Learning innovation. Content analysis was conducted on the discussions of the focus group and revealed four broad dimensions and relevant concepts. The four dimensions were student preparedness, differentiation of the innovation, curriculum pressure and faculty leadership. The concepts associated with each of the four dimensions are outlined in Table 5.

Table 5A. Demand Side Preparedness

Codes	Statements	Related literature
Student expectations	Students expect to be provided with all the materials needed to pass examinations as this is most important to them	Student expectations (Millican, 2014)
Programme demands	Pressure of the overall programme on students may cause them to demand more efficient learning methodologies.	Curriculum coverage (Moust, van Berkel, & Schmidt, 2005)
Culture shock	Shock of new methods to students, given prior teaching-learning experiences	Novelty of innovation (Moust, van Berkel, & Schmidt, 2005)
Knowledge of innovation	Students’ lack of knowledge and appreciation of what constitutes authentic teaching and learning	Novelty of innovation (Moust, van Berkel, & Schmidt, 2005)

Table 5B. Supply Side Preparedness

Codes	Statements	Related literature
Differentiation of the innovation	Faculty are unsure of how the Authentic Teaching and Learning innovation differs from student-centric approaches Faculty are unclear about what the School expects of them. Faculty members are not sure what is the gap between their current teaching methods and the expectations of the institution.	Value internalization (Badmus, 2007)
Competing philosophies	Apparently competing philosophies of teaching and learning between the faculty and the institution as well as within the institution	Value internalization (Badmus, 2007)
Programme demands	Pressure of overall programme on faculty may cause a shift to more efficient teaching-learning methods	Curriculum coverage (Moust, van Berkel, & Schmidt, 2005)
Faculty change leadership	Faculty members are not equipped to be change agents as required with the authentic teaching-learning approach.	Student expectations (Millican, 2014)

The analysis of the SoC yielded the following results that were considered most important to the progress of the Authentic Teaching and Learning innovation:

- 1) The School had a positive non-user profile and faculty members were willing to proceed with the implementation of the Authentic Teaching and Learning innovation.
- 2) The School had a large number of adjunct faculty who were willing to collaborate to advance the innovation.
- 3) There was a high level of concern at the Personal stage that could threaten faculty members' openness to further information about the innovation.

The SoC profile, combined with the preparedness barriers outlined by the faculty in the focus group and insights of the researchers as administrators, yielded the following analysis of the existing administrative strategies, and guidance to improve interventions in the next phase of implementation.

The Intervention Matrix yielded explicit administrative activities that would address faculty members' concerns and perceived barriers (Table 6). It provided clarity with respect to the actual changes required in administrative activities and, as such, enhanced the motivation of administrators to proceed with the next phase of implementation. The major activities requiring attention, based on the Intervention Matrix, were the student orientation exercise, faculty development, curriculum review and school leadership.

Table 6. Intervention Matrix

SOC Findings	Preparedness Barriers			
	Student Preparedness	Differentiation of Innovation	Curriculum Pressure	Faculty Leadership
Finding 1: Positive non-user profile and faculty willingness  Finding 2: Faculty willingness to collaborate	1. Orient students to the innovation at inception of the programme  2. Faculty promotion of best practices that include and excite students	1. Define elements of authenticity in the innovation and differentiate from other teaching practices.  2. Show the benefit of the innovation.	1. Curriculum review to include elements of the innovation and facilitate planning  2. Faculty engagement in curriculum review  3. Review the curriculum to gradually introduce the innovation to the students.	Faculty training that includes mentorship, coaching and reflective exercises in a network of support.

SOC Findings	Preparedness Barriers			
	Student Preparedness	Differentiation of Innovation	Curriculum Pressure	Faculty Leadership
Finding 3: High concerns at Personal stage	Student orientation to the innovation to include personal concerns.	<ol style="list-style-type: none"> <li>1. Connect teaching practices of faculty to the innovation.</li> <li>2. Provide support to faculty to enhance self-efficacy.</li> </ol>	<ol style="list-style-type: none"> <li>1. Faculty engagement in curriculum review</li> <li>2. Faculty reward system for change.</li> </ol>	<ol style="list-style-type: none"> <li>1. Faculty leadership development</li> <li>2. Provide support to faculty to enhance self-efficacy.</li> </ol>

### **Conclusion, Implications and Recommendations**

The research sought to answer the overall question: “How can the institution be more targeted in its support to faculty and improve the implementation of the Authentic Teaching and Learning innovation?” The researchers used a mixed-methods approach to assess the existing level of success of implementation and gain insights for the next stage.

The profile obtained from the Stages of Concern analysis of the faculty body at the School was that of a positive non-user, with respondents indicating high levels of self-concerns, low levels of impact concerns and a willingness to continue with the implementation of the innovation. The non-user profile was the most typical found in SoC research (Hall, 1977). Based on this profile, faculty members demonstrated both positive and negative dispositions towards continued implementation. On the positive side, faculty was very willing to continue with the implementation of the Authentic Teaching and Learning innovation. However, many of them were distracted and not focused on the question of pedagogy. On the negative side, faculty was primarily concerned about how the Authentic Teaching and Learning innovation would affect their established teaching activities and routines and less concerned about obtaining more information. Change champions would therefore have to reduce their personal concerns before bringing new information about the Authentic Teaching and Learning innovation to them (Hall, 1977).

The SoC profile of faculty based on contractual status indicated that full-time faculty had higher task concerns than adjunct. This finding, however, was not significant based on the multivariate test and the researchers’ projection was supported in this instance. With respect to differences by years of teaching experience, the SoC profile indicated that faculty with less experience had higher levels of task concerns than their more experienced colleagues, contrary to the researchers’ expectations. This was not found to be significant, based on multivariate tests. This alerts change champions to the potential areas of difference in concerns based on years of experience. The analysis of the joint effect of both characteristics on the SoC, however, brought to light interesting findings at the 10% level of significance. All adjunct and full-time faculty in the 0-5 years’ experience category showed high concern for collaboration. Change champions would be able to draw on this finding to establish more collaborative models for faculty sharing and development.

The effort to arrive at possible interventions required an understanding of potential barriers to implementation from the perspective of the faculty body. Four distinct barriers were identified from the focus group and these were then examined in relation to three major SoC findings. The results yielded implications for adjustments to the School’s implementation support mechanisms in the areas of student orientation exercises, faculty development, curriculum review, and school leadership. The student orientation exercises would need to be reviewed to address issues such as culture shock based on previous classroom experiences and to establish clear expectations regarding student learning activities. Faculty development activities would clarify the gap between what exists and what is possible with respect to Authentic Teaching and Learning. Faculty development would be more collegial, and successes communicated more visibly within the institution. In the case of the influence of the curriculum, the School would need to first include faculty more actively in the curriculum review processes and ensure that there is clarity with respect to the articulation of the authentic teaching and learning experiences within and across courses.

The overall exercise of re-directing and enacting appropriate support mechanisms to advance the Authentic Teaching and Learning innovation requires leadership that is inspirational and impact oriented. School systems, including faculty performance assessment systems, would need to give primacy to impact, rather than outcomes.

Indicators of decline in the problem of relevance, which the Authentic Teaching and Learning innovation is seeking to address, must be emphasized and celebrated.

This case study provided significant insights into the attempts to lead the innovation, however, the findings of the study may not have external validity, especially since the sample size was small and the context very specific. Some of the implications for future research are the inclusion of the Levels of Use and Innovation Configuration map, the two other tools of the CBAM, which would provide an enhanced level of richness to the data and robustness to the conclusions.

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Appendix A: Questionnaire Items According to Stages of Concern

Question #	Question Text
Stage 0: Unconcerned	
Q3:	I am more concerned about another innovation.
Q12:	I am not concerned about Authentic Teaching and Learning Approach at this time.
Q21:	I am completely occupied with things other than Authentic Teaching and Learning Approach.
Q23:	I spend little time thinking about Authentic Teaching and Learning Approach.
Q30:	Currently, other priorities prevent me from focusing my time on Authentic Teaching and Learning Approach.
Stage 1: Informational	
Q6:	I have a very limited knowledge about Authentic Teaching and Learning Approach.
Q14:	I would like to discuss the possibility of using Authentic Teaching and Learning Approach.
Q15:	I would like to know what resources are available if we decide to adopt Authentic Teaching and Learning Approach.
Q26:	I would like to know what the use of Authentic Teaching and Learning Approach will require in the immediate future.
Q35:	I would like to know how Authentic Teaching and Learning Approach is better than what we have now.
Stage 2: Personal	
Q7:	I would like to know the effect of reorganization on my professional status.
Q13:	I would like to know who will make the decisions in the new system.
Q17:	I would like to know how my teaching or administration is supposed to change.
Q28:	I would like to have more information on time and energy commitments required by Authentic Teaching and Learning Approach.
Q33:	I would like to know how my role will change when I am using Authentic Teaching and Learning Approach.
Stage 3: Management	
Q4:	I am concerned about not having enough time to organize myself each day (in relation to Authentic Teaching and Learning Approach).
Q8:	I am concerned about conflict between my interests and my responsibilities.
Q16:	I am concerned about my inability to manage all that Authentic Teaching and Learning Approach requires.
Q25:	I am concerned about time spent working with nonacademic problems related to Authentic Teaching and Learning Approach.
Q34:	Coordination of tasks and people (in relation to Authentic Teaching and Learning Approach) is taking too much of my time.
Stage 4: Consequence	
Q1	I am concerned about students' attitudes toward Authentic Teaching and Learning Approach.
Q11:	I am concerned about how Authentic Teaching and Learning Approach affects students.
Q19:	I am concerned about evaluating my impact on students (in relation to Authentic Teaching and Learning Approach).
Q24:	I would like to excite my students about their part in Authentic Teaching and Learning Approach.
Q32:	I would like to use feedback from students to change the program.

Question #	Question Text
Stage 5: Collaboration	
Q5:	I would like to help other faculty in their use of Authentic Teaching and Learning Approach.
Q10:	I would like to develop working relationships with both our faculty and outside faculty using Authentic Teaching and Learning Approach.
Q18:	I would like to familiarize other departments or persons with the progress of this new approach.
Q27:	I would like to coordinate my efforts with others to maximize the effects of Authentic Teaching and Learning Approach.
Q29:	I would like to know what other faculty are doing in this area.
Stage 6: Refocusing	
Q2:	I now know of some other approaches that might work better than Authentic Teaching and Learning Approach.
Q9:	I am concerned about revising my use of Authentic Teaching and Learning Approach.
Q20:	I would like to revise the Authentic Teaching and Learning approach.
Q22:	I would like to modify our use of Authentic Teaching and Learning Approach based on the experiences of our students.
Q31:	I would like to determine how to supplement, enhance, or replace Authentic Teaching and Learning Approach.

Appendix B: Stages of Concern About an Innovation

Stages of Concern		Description
Self	0 Unconcerned	The individual indicates little concern about or involvement with the innovation.
	1 Informational	The individual indicates a general awareness of the innovation and interest in learning more details about it. The individual does not seem to be worried about him/herself in relation to the innovation. Any interest is impersonal, substantive aspects of the innovation, such as its general characteristics, effects, and requirements for use.
	2 Personal	The individual is uncertain about the demands of the innovation, his or her adequacy to meet those demands, and/or his or her role with the innovation. The individual is analyzing his or her relationship to the reward structure of the organization, determining his or her part in decision making, and considering potential conflicts with existing structures or personal commitment. Concerns also might involve the financial or status implications of the program for the individual and his or her colleagues.
Task	3 Management	The individual focuses on the processes and tasks of using the innovation and the best use of information and resources. Issues related to efficiency, organization, managing, and scheduling dominate.
Self	4 Consequence	The individual focuses on the innovation's impact on students in his or her immediate sphere of influence. Considerations include the relevance of the innovation for students; the evaluation of student outcomes, including performance and competencies; and the changes needed to improve student outcomes.
	5 Collaboration	The individual focuses on coordinating and cooperating with others regarding use of the innovation.
	6 Refocusing	The individual focuses on exploring ways to reap more universal benefits from the innovation, including the possibility of making major changes to it or replacing it with a more powerful alternative.

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