

# SABAH ENGLISH LANGUAGE TEACHERS' CONCERNS IN IMPLEMENTING A CURRICULAR INNOVATION

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## ABSTRACT

*Teachers are likely to resist change, unless they are convinced that it significantly benefits themselves and their students. Since teachers play an important role in the effective implementation of an innovation, it is therefore necessary to investigate the nature of teachers' concerns in the technology-enhanced innovation adoption process. The main purpose of the study was to examine and identify the "concerns" of English language teacher teaching in Smart Schools in Sabah, in relation to the implementation of the Smart School Curriculum (SSC) in their classrooms. Teacher "concerns" is measured using the Concerns-Based Adoption Model (CBAM) where "concerns" is defined as the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task. Data was mainly elicited using a questionnaire, supplemented by open-ended responses elicited asynchronously. An adaptation of the Stages of Concern Questionnaire (SoCQ) based on the CBAM was administered to all the English language teachers teaching in the five Smart Schools in Sabah. According to the findings, the concerns of the teachers largely focused on the "self" and "task" stages of the Stages of Concerns (SoC) model. Findings derived from supplementary open-ended elicitation procedure revealed that teachers were concerned with the processes and tasks involved in implementing the innovation such as those relating to their daily teaching duties, the best use of ICT in teaching and learning, scheduling, time, and organization.*

**Keywords:** CBAM, English teachers' concerns, Malaysian Smart school implementation, teacher professional development

## Introduction

The implementation of educational innovations is recognised in the literature as typically presenting a number of challenges. Examples of innovations, that were implemented as intended, whether they were implemented abroad or locally, are indeed few and far in between. For example, in various findings culled from studies abroad, such as those by Verspoor (1989), Fullan and Hargreaves (1992), Low *et al.* (1993), Pennington (1995), Hamilton (1996), Karavas-Doukas (1998), Dexter *et al.* (1999), Wetzel (2001), and Wedell (2003), it was found that most innovations failed or were "subverted" and partly implemented.

Thus, for instance, Dexter *et al.*'s (1999) study shows that teachers' resistance to change is primarily due to their concerns regarding the influence of instructional technology integration on their preparations, beliefs, and values. The concerns identified included teacher technical ability and proficiency with instructional proficiency, organizational culture, and climate conditions that are beyond the control of the teachers. Further research by Wetzel lends support to the findings by Dexter *et al.* which found that teachers have not rushed to change their instructional practice to accommodate the integration of instructional technology to facilitate their teaching and learning process. According to research done by Dexter *et al.* (1999) and Becker (1991), teacher resistance to change is primarily due to their concerns relating to teachers' technical ability and proficiency with instructional proficiency, organizational culture, and climate conditions that are beyond the control of the teachers. Additional research by Wetzel lends support for research by Dexter *et al.* which found that the work of integrating instructional technology into practice is a complex process.

According to Henrichsen (1989) and Hord *et al.* (1987), teachers encounter this complex process as either a bureaucratic or a professional culture and that the manner in which they encounter the process presents dissimilar viewpoints to teachers. Wetzel (2001:44) argues that, "bureaucratic cultures tend to give teachers autonomy in their classrooms, but restrict their participation in curricular and organizational decisions." On the other hand, "professional cultures support innovation and collaboration among teachers and it was found that in such culture, decisions are based on a guiding philosophy regarding teaching and learning and sensitivity to the learning needs of the students." Becker (1991) (in Wetzel, 2001) found that only 5 percent of technology implementation programmes succeed beyond a three- to five-year period in schools and the main culprit to such low success rate was attributed to the bureaucratic cultures of school.

Similarly, research on the many innovations carried out in Malaysia by Charlesworth (1975), Ahmad (1986), Rahman (1987), Khalid (1989), Syed Zin (1990), Ibrahim (1991), Nor Puteh (1994), and Goh (1999), indicate that there is surprisingly little change at the classroom level. Thus, for instance, in a case study investigation, Nor Puteh finds that many teachers continue to feel there was nothing substantively new about the *New Integrated Curriculum for Secondary Schools* (in Malay language, *Kurikulum Bersepadu Sekolah Menengah*, KBSM) despite efforts to help them adopt new approaches to teaching and learning. Recent studies carried out on the SSC innovation project, especially on the teaching and learning component of the project, have revealed a number of difficulties (Salim and Md. Nor 2005; Mohd Nor 2005). Salim and Md. Nor, for instance, in their study of the implementation of the Smart School approach in the state of Selangor via questionnaire survey and interviews, found that the lack of resources (particularly those relating to computers, teaching-learning materials, and classroom size), shortcomings in teacher development, teachers' heavy workload, and the examination-oriented nature of the educational system were the major stumbling blocks preventing teachers from successfully implementing the Smart School approach. Similarly, Mohd Nor's study using interviews, classroom observations, and document reviews on the factors facilitating the integration of the ICT element in Malaysian Smart Schools (MSS), highlighted the conditions that facilitated or hindered its integration in Smart Schools. Of the three pilot Smart Schools studied, only one appeared to have integrated ICT into classroom teaching, with another showing signs of partial implementation, and the third abandoning the process altogether. Mohd Nor also found teachers faced various problems in implementing ICT integration in the MSS classrooms — shortage of time, course content problems, technical malfunction, and so on.

Depending on the types of concerns and the related feelings of certainty (or uncertainty), teachers may consider themselves as qualified or not to implement the desired innovation. It has been acknowledged that teachers are likely to resist change, unless they are convinced that it significantly benefits themselves and their students (van den Berg *et al.* 2000; Cristou *et al.* 2004). van den Berg *et al.* partly attributed this reaction to the teachers' reluctance to view themselves as change agents. Since Smart School teachers play an important role in the effective implementation of the Smart School innovation, it is therefore necessary to investigate the nature of teachers' concerns in the technology-enhanced innovation adoption process. A commonly used theoretical framework to assess reaction to computer technology usage is the Concerns-Based Adoption Model (CBAM). The concept of "concerns" has been described as, "the composite representation of the feelings, preoccupation, thought, and consideration given

to a particular issue or task. Depending on the personal make-up, knowledge, and experience, each person perceives and mentally contends with a given issue differently; thus there are different kinds of concerns" (Hall and Hord 1987, 59). The theory and research of Hall and Hord (1987) and Hall *et al.* (1987) that "concerns change over time in a fairly predictable, developmental manner." It is postulated that if concerns can be predicted throughout the change process, then it is possible to "design in-service and other intervention activities to address those needs" (Dooley 1999).

In the sections that follow, the background of study will be outlined in order to provide the basis for the succeeding sections. First, the innovation is presented. Then, the theoretical framework, methodology, data analysis, and findings of this study are introduced. Following that, the paper delineates and discusses the findings obtained. The final section of the paper examines the implications of these findings to curriculum implementation.

## **Background of Study**

### ***The Malaysian Smart School Curriculum (SSC) innovation and challenges posed***

The Malaysian Smart School Curriculum (SSC) innovation has been borne upon Malaysia's ambitious drive to achieve developed nation status by the year 2020 (a long-term national project known as "Vision 2020"). The vision calls for a sustained, productivity-driven growth, and requires Malaysian citizens to be technologically literate, creative, and critical-minded in order to meet the challenges of the "Information Age" (Ministry of Education 1997, 9).

Thus, in 1999, as part of this process, Malaysia embarked on a massive endeavour at the national level to implement an educational innovation to bring about a paradigm shift in her national education policy. Towards this end, a curriculum blueprint (*The Malaysian Smart School—A Conceptual Blueprint*), in keeping with this ambition was formulated by the Ministry of Education in consultation with a group of foreign educational experts, industry representatives, and officials from the Multimedia Development Corporation (MDC), in an attempt to ensure that the latest thinking from both inside and outside Malaysia was brought to bear (Ministry of Education 2004, 5). In this way, the new curriculum would capture global educational best practices, rather than just being based solely on the potential from development residing within indigenous educational traditions.

This resulted in the SSC initiative (Ministry of Education 1997, 9). The overall goal of the SSC has therefore been to restructure the entire basic education school teaching and learning environment as a major part of realising the aims of Vision 2020. Starting with ninety pilot schools in 1999, the intention is to complete the implementation of the SSC initiative in all the ten thousand Malaysian basic education level schools by the year 2010 (ibid., 9).

### *The overall nature of the change*

The SSC involved restructuring at the basic education level of fundamental educational components such as the curriculum, pedagogy, teaching-learning materials, and assessment.

Thus, at the curriculum level, the SSC is designed to ensure that children are educated with critical and creative thinking skills, inculcated with appropriate values, and encouraged to improve their language proficiency while being allowed to progress at their own pace according to their own learning preferences and needs (Ministry of Education 1997, 11).

Accordingly, it is intended that the SSC pedagogy will use a mix of learning strategies to make learning more interesting, motivating, stimulating, and meaningful while at the same time ensuring mastery of basic competencies, promoting holistic development, and accommodating individual different learning styles (ibid., 11).

In turn, teaching-learning materials designed as vehicles for the new SSC strategies are intended to accommodate students' differing needs and abilities while also ensuring a fuller realization of the learners' capabilities and potential. They are also expected to allow learners to partake actively in the learning process while at the same time assuming greater responsibility for managing and directing their own learning (Ministry of Education 1997).

The SSC assessment procedures are intended to replace a predominantly norm-referenced system with one that is element-based and criterion-referenced in order to provide a more holistic and accurate picture of a student's performance (ibid., 11). Thus, the scope of the SSC initiative involves far-reaching and fundamental systemic and cultural change in all main aspects of the Malaysian basic education system.

### *The cultural and professional challenges posed by the SSC innovation*

As previously indicated, reform of this nature clearly involves a major shift in the underlying thinking and methodological practices on the part of teachers.

However, it can be assumed that a similar level of change has to be undertaken by all the other main stakeholders concerned as well.

Thus, learners have to accustom themselves to new pedagogical practices; parents have likewise to come to terms with what the new curriculum means; those with school-level responsibility for overseeing the implementation of the innovation, such as principals and heads of department, have to work out how to introduce and guide the change process so as to make the new ideas work as effectively as possible in everyday school context; trainers and materials developers have to re-orient their thinking in order to devise pedagogical models and teaching resources of a very different nature; and assessment experts have to wrestle with the challenges of bringing about what is in many ways a volte-face in assessment practices.

The introduction of the SSC has thus involved “root and branch” change at all the main levels of the basic education system. Teachers, however, by virtue of being the primary interface between the curriculum vision and its delivery to the intended beneficiaries, have been particularly at the sharp end of this process. Although the instructional evolution involving ICT in teaching is not meant to demand teachers to abandon their traditional practices altogether, there is no denying that the SSC innovation entails a massive transformation in the way teachers work. Teachers who have been comfortable all along in the traditional delivery mode might not be willing to give up their roles as “a sage on the stage” to become “a guide by the side.” The biggest concern is the disparity between the pedagogic assumptions underlying the objectives of the innovation and the pedagogic practice of most teachers in Malaysia. Historically, the educational culture in Malaysia is one that is transmission-based. Adopting a new teaching and learning paradigm that is interpretative-based raises serious concerns about the viability and sustainability of the innovation. Thus, it is therefore primarily their views and experiences on which this study concentrates.

## **Theoretical Framework**

The Concerns-Based Adoption Model (CBAM) was used as a heuristic to answer the following main question: *What are the ESL teachers' concerns in implementing the SSC innovation?* This question was formed in order to identify teachers' readiness in the form of Hall and Hord's (1987, 58–59) “concerns,” i.e., “the composite representation of the feelings, preoccupation, thought, and consideration given to a particular issue or task,” faced by the teachers in implementing the SSC innovation.

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

The CBAM model is commonly used to describe how teachers perceive an innovation from the time they first became aware of it until they gained mastery of the innovation (Hall and Loucks 1978). Users were initially concerned about how an innovation affected them personally and later became concerned with how the innovation impacted their work environment. A Stages of Concern Questionnaire (SoCQ) was developed from the original conceptualizations provided by Hall *et al.* (1973). Seven stages of concerns affecting users or potential users of an innovation were identified, namely, Awareness, Informational, Personal, Management, Consequences, Collaboration, and Refocusing. These stages of concerns are perceived to be distinctive, but are not necessarily mutually exclusive (Hord *et al.* 1987). The seven stages vary in intensity and, consequently, characterize the developmental nature of individual concerns. The seven stages of concerns include:

**TABLE 1: Seven stages of concerns**

| Stages of Concerns      | Descriptors                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Awareness (Stage 0)     | <i>Teachers have little knowledge of the innovation and are likely to exhibit little or no concern about it.</i>                                                                                                                                                                                                                                               |
| Informational (Stage 1) | <i>Teachers exhibit concerns for what the innovation is and the requirements for its implementation.</i>                                                                                                                                                                                                                                                       |
| Personal (Stage 2)      | <i>Teachers become absorbed with the effects of an innovation upon themselves personally. They may be concerned about their own time limitations and the changes they will be expected to make. At this point they exhibit little concern about how to manage the changes in their classroom or how the changes will affect the level of student learning.</i> |
| Management (Stage 3)    | <i>Concerns begin to focus on methods for managing the innovation within the classroom. Teachers now express concern over organization, tasks and details of the implementation, and overcoming difficulties.</i>                                                                                                                                              |
| Consequence (Stage 4)   | <i>Teacher concerns now focus upon effects on student learning. If positive effects are observed, teachers will desire to continue the implementation.</i>                                                                                                                                                                                                     |
| Collaboration (Stage 5) | <i>Concerns again shift towards need to coordinate, share, and work cooperatively with colleagues in implementing the innovation.</i>                                                                                                                                                                                                                          |
| Refocusing (Stage 6)    | <i>Teachers evaluate the innovation and make suggestions for continued improvements, or teachers consider alternate innovations.</i>                                                                                                                                                                                                                           |

Source: Adapted from Hall and Hord 2001, 63.

The various stages of concerns can be summarized in table 2, along with the "focus" (i.e., the broad category of type of concern) each of them is perceived to relate to, as well as typical expressions of each of the concerns.

The stages of concerns are grouped into three dimensions: Self, Task, and Impact (Hord *et al.* 1987) in order to reflect the developmental nature of concerns. Thus, in the early stages of a change effort, an individual is typically deemed to have personal concerns with the change (*Self* concerns). In the latter stages of an innovation, however, *Task* and *Impact* concerns of the innovation become more pronounced.

The system, first of all, allows for the possibility of a complete lack of awareness and thus of concerns. Then come "self" concerns, which are those that deal with the subject's personal feelings of adequacy and competence in relation to handling the innovation in question; "task" concerns relate to subjects' preoccupation with mastering the techniques involved in various aspects of teaching associated with the innovation; and "impact" concerns are those that focus on student learning and what the subject can do to enhance student learning.

As can also be seen, "Unrelated" concerns consist of one stage, i.e., Awareness. "Self" concerns consist of two stages, Stage 1—Informational, and Stage 2—Personal. "Task" concerns consist of Stage 3—Management, and "impact" concerns consist of Stage 4—Consequence, Stage 5—Collaboration, and Stage 6—Refocusing. In the Awareness stage, the teacher has little awareness of the innovation and is not likely to be concerned about it. In the Informational stage, teachers are seeking an understanding of the innovation itself. Teachers at the Personal stage are beginning to express concerns about their ability to meet changing expectations resulting from the innovation. In the Management stage, teachers focus on implementation concerns, i.e., those arising out of attempts to put the change into practice. Teachers at the Consequence stage express concerns about the impact of the innovation on their students while in the Collaboration stage, teachers become concerned about their relationship with others also involved in implementing the innovation. Finally, in the Refocusing stage, teachers express an interest in adapting the innovation or considering alternative innovations.

**TABLE 2:** Stages of concerns: typical expressions of “concern” about an innovation

| Focus            | Stages           | Typical Expressions of the Concerns                                                                  |
|------------------|------------------|------------------------------------------------------------------------------------------------------|
| <i>Unrelated</i> | 0: Awareness     | <i>I am not concerned about it.</i>                                                                  |
| <i>Self</i>      | 1: Informational | <i>I would like to know more about it.</i>                                                           |
|                  | 2: Personal      | <i>How will using it affect me?</i>                                                                  |
| <i>Task</i>      | 3: Management    | <i>I seem to be spending all my time getting materials ready.</i>                                    |
| <i>Impact</i>    | 4: Consequence   | <i>How is my use affecting learners?</i><br><i>How can I refine the program to have more impact?</i> |
|                  | 5: Collaboration | <i>How can I relate what I am doing to what others are doing?</i>                                    |
|                  | 6: Refocusing    | <i>I have some ideas about something that would work even better.</i>                                |

Source: Adapted from Hall and Hord 2001, 61.

## Methods

### *Instrumentation: Teacher Questionnaire*

According to Hall and Hord (2001), there are three ways of assessing concerns: one-legged interviews, open-ended statements, and stages of concerns questionnaires. Each of these methods has their strengths and weaknesses. However, only the results of the stages of concerns questionnaires (SoCQ) are presented and discussed.

The stages of concerns used in the study do not correspond exactly to the original 35-item 7-stage concerns developed by Hall, George and Rutherford (1979). Instead, the simplified 22-items 5-stage version of Stages of Concerns Questionnaire modified by Cheung *et al.* (2000) was used. There were two main reasons why the shorter version of the SoCQ was adopted. Firstly, in a recent study by Cheung *et al.*, it was revealed that the 35-item 7-stage model in Hall *et al.* (1979) was unwieldy. Using a modified 5-stage 22-item model, Cheung *et al.* found that their version worked more satisfactorily. Their modified five stages of concerns are summarized in table 3.

Secondly, the shorter version of the SoCQ was adopted because feedback from earlier pilot studies indicated that the 35-item questionnaire was too time consuming and laboriously demanding to respond. As there was

also other information being sought in the questionnaire, it was therefore decided for this reason also that the shorter Cheung *et al.* (2000) questionnaire was better suited for this study with minor adaptations in wording to suit the specifics of the research context (see appendix A for the list of the 22 questions that were used).

**TABLE 3:** Modified stages of concerns

| <b>Focus</b>  | <b>Stages</b>                        | <b>Typical expressions of the Concerns</b>                                                                                                                                                                   |
|---------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Self</i>   | 1: <i>Indifference</i>               | <i>Little concern about or interest in the innovation.</i>                                                                                                                                                   |
|               | 2: <i>Informational/ Personal</i>    | <i>Is concerned about some general aspects of the innovation, such as unique features and benefits of the innovation, requirements for use, and personal commitment.</i>                                     |
| <i>Task</i>   | 3: <i>Management</i>                 | <i>The focus is on efficiency and time demands of implementing the innovation. The person is worried about issues such as the best use of information and resources, scheduling, time, and organization.</i> |
| <i>Impact</i> | 4: <i>Consequence/ Collaboration</i> | <i>The person is concerned with impact of the innovation on students as well as coordination and cooperation with others regarding use of the innovation.</i>                                                |
|               | 5: <i>Refocusing</i>                 | <i>The focus is on possibility of improving the innovation by changing some of its features or by replacing it with an alternative.</i>                                                                      |

Source: Adapted from Cheung and Ng 2000, 110.

## ***Participants***

The SoCQ was administered to 28 English language teachers in all five secondary Smart Schools in the state of Sabah implementing the SSC. A total of 21 ESL teachers completed and returned the questionnaire giving an overall return rate of 75 percent. Demographic information of the participants who took part in the survey such as the gender of participants, the age category, the number of years of teaching experience, and attendance in the 12/14 week Smart School Inservice Training (INSET) course are shown in table 4.

**TABLE 4:** Demographic information of respondents

| Demographic Information                |           |             |
|----------------------------------------|-----------|-------------|
| Gender                                 | Frequency | Percent (%) |
| Male                                   | 3         | 14.3        |
| Female                                 | 18        | 85.7        |
| Total                                  | 21        | 100         |
| Age in categories                      |           |             |
| 21-30                                  | 5         | 23.8        |
| 31-40                                  | 12        | 57.1        |
| 41-50                                  | 4         | 19.0        |
| > 50                                   | 0         | -           |
| Number of years of teaching experience |           |             |
| 0-5                                    | 6         | 28.6        |
| 6-10                                   | 3         | 14.3        |
| 11-15                                  | 5         | 23.8        |
| 16-20                                  | 3         | 14.3        |
| > 21                                   | 4         | 19.0        |
| Special 14-week INSET for Smart School |           |             |
| Attended                               | 2         | 9.5         |
| Not attended                           | 19        | 90.5        |

As can be seen, the respondents consisted of 85.7 percent female compared to 14.3 percent male. Most of the respondents (57.1%) were within the ages of 31 and 40 with an average of ten years of teaching experience, followed by 23.8 percent of teachers between the ages of 21 and 30 and 19.0 percent of teachers between the ages of 41 and 50. Hence, the bulk of the respondents (approximately 76%), were experienced teachers with more than five years of teaching experience. However, despite the fact that most of the respondents were trained teachers, only a few of them had attended the INSET course designed for teachers to carry out the innovation in schools (9.5%). The majority of the teachers had not attended any formal courses. Most of them professed to implement the innovation based on whatever they learned from the in-house training conducted by their peers in schools and "learning by doing."

## **Data analysis**

Group concerns can be analysed by "aggregating individual data together to form a profile that provides the average scores for each stage of the individuals in a group. The group averages will typically reflect the dominant high and low stages of concern for the entire group." In this study, participant responses on the SoCQ were analysed using SPSS. The first and the second highest stages of concerns for all respondents were analysed for possible patterns along with the lowest stage of concerns. Hall *et al.* (1979) pointed out that identifying the second highest stage of concerns along with the peak stage allow us to develop a profound understanding of the dynamics of concerns of these group of teachers.

According to Hall *et al.* (1979, 32), there are two recommended ways of treating group data of this kind. One way of looking at group concerns is "to aggregate individual data by developing a profile that presents the mean scores for each stage of the individuals in a group. The group averages will reflect the dominant high and low stages of concerns of the composite group." The second way is "to tally the number of individuals that are high on each stage" (*ibid.*), which when collated, provides a picture of the range of peak stage scores within a group. Both procedures were felt to be useful and are used in the data presented below.

## **Results**

### ***Profile of group concerns***

To portray a profile of the stages of concerns, teachers' responses to the 22 SoCQ items were first coded on a scale of 0 to 7; 0 for "not true of me now" through to 7 for "very true of me now." High number responses indicate a high level of identification with the concerns in question, and vice-versa. Then, the raw score for each of the five stages was summed up and the mean scores for each stage were aggregated using a statistical software program (SPSS Version 11.5). Table 5 summarizes the group means for the five stages of concerns.

**TABLE 5:** Group means for each stage of concerns

|                |       | Stages of Concerns   |                                       |                       |                                          |                       |
|----------------|-------|----------------------|---------------------------------------|-----------------------|------------------------------------------|-----------------------|
|                |       | Self                 |                                       | Task                  | Impact                                   |                       |
|                |       | Stage 1<br>Awareness | Stage 2<br>Informational/<br>Personal | Stage 3<br>Management | Stage 4<br>Consequence/<br>Collaboration | Stage 5<br>Refocusing |
| N              | Valid | 21                   | 21                                    | 21                    | 21                                       | 21                    |
| Mean           |       | 2.63                 | 4.61                                  | 4.43                  | 4.45                                     | 3.87                  |
| Std. Deviation |       | 1.12                 | 1.41                                  | 1.09                  | 0.90                                     | 0.90                  |

As can be seen, there is a relatively high level of intensity of concern at Stage 2 (Informational/Personal), 3 (Management), and 4 (Consequence/Collaboration). Stage 1 (Awareness) and Stage 5 (Refocusing) concerns, on the other hand, were somewhat lower.

The high score for Stage 2 (Informational/Personal) concerns suggests that the group might be having widespread worries about their ability to perform in the school environment in terms of the innovation. Both the Informational and the Personal stages relate to self-worries of teachers, such as issues with perceptions of benefits, requirements for use, and personal commitment to the innovation. There were also high Stage 4 concerns—those associated with Consequence and Collaboration, i.e., concerns related to the impact of the innovation on students as well as coordination and cooperation with other teachers regarding use of the innovation. The relatively high level of Stage 3 concerns—Management, i.e., concerns regarding the daily teaching duties, also merits attention. It suggests that there were a good number of teachers who were still worried about issues such as the best use of information and resources, scheduling, time, and organization.

Meanwhile, the relatively lower scores for Stage 1 concerns (Awareness—the issue of teachers having little knowledge of the innovation and have no interest in taking any action in connection with it) and Stage 5 (Refocusing—to do with ways of thinking about improving the innovation by changing some of its features or by replacing it with an alternative) suggests that by and large, the majority of the respondents were not as strongly affected by concerns related to these stages. The relatively low Stage 1 concerns suggest that the teachers were reasonably well aware of the nature of the

SSC innovation. Stage 5 concerns were also not as intense as Stage 2, 3, and 4, presumably because they occur mainly after the earlier stages of concerns have been allayed (Hall *et al.* 1979) and, as this appeared to have not yet occurred, were off the respondents' "radar."

Taken as a whole, thus, the profile that emerged seems to indicate that the awareness-raising stage of the innovation implementation process appeared to have been completed with a reasonable degree of success, but has yet to be capitalized on in terms of sufficiently turning "theory" into everyday "practice." By the same token, the more advanced implementation stage, associated with Level 5 concerns, has yet to be reached by many in the group presumably because of the continuing preoccupation they have with Stage 2–3 concerns. This implies that the more developed, personalized levels of ownership of the innovation (high Stage 4 and 5) associated with successful innovation (Hall and Hord 1987, 72) have yet to occur for many of the teachers.

### *Individual peak score data*

The former procedure, i.e., looking at the group profile by the mean scores of the individuals in a group is useful in providing an overview of the group concerns. However, the limitation is that it obscures any high peak score trends due to the process of averaging individual data. As a result, it may not reveal the individual highs of distinct subgroups which are useful to help develop additional insight into the dynamics of concerns. This is where the second treatment of group data, the frequency count of high stage scores, is beneficial.

The profile for the individual peak score is derived by tallying up the number of individuals that are high on each stage. The data when collated provides a picture of the range of peak stage scores within a group, as shown in table 6.

**TABLE 6:** Frequency of highest concerns stage for individual respondents

|                                  | Highest Stage of Concerns (N = 21) |                          |                   |                      |                    |
|----------------------------------|------------------------------------|--------------------------|-------------------|----------------------|--------------------|
|                                  | Stage 1<br>Awareness               | Stage 2<br>Info/Personal | Stage 3<br>Manage | Stage 4<br>Con/Colla | Stage 5<br>Refocus |
| <b>Number of<br/>Individuals</b> | 0                                  | 7                        | 9                 | 4                    | 1                  |

As can be seen, out of the five stages of concern, Stage 3 concerns (Management) has the highest number of people (9), followed closely by Stage 2 concerns (Informational/Personal) with seven people. There were four individuals with high Stage 4 concerns (Consequence/Collaboration), but only one respondent with a high Stage 5 concerns (Refocus). As expected, none of the respondents had high Stage 1 concerns (Awareness). This would appear to be because the SSC innovation is currently at the post-pilot implementation phase and to have teachers in the Smart School not being aware of the innovation at this stage would be very unusual. Comparing these results with the earlier group findings (see table 5), we can generally surmise that the ESL teacher respondents as a whole had intense Stage 2 (Informational/Personal) and Stage 3 concerns (Management) and an average Stage 4 concerns (Consequence/Collaboration), thus supporting and affirming the earlier findings that the majority of the Smart Schools' ESL teachers were having intense "self" and "task" concerns, i.e., they appeared to be too preoccupied with the problems of how to make the SSC innovation work in practice for them.

### *Open-ended responses*

Besides examining data derived from the closed-ended items in the form of the SoCQ, open-ended data were also elicited from respondents via e-mail and asynchronous discussion board (Nicenet—[www.nicenet.org](http://www.nicenet.org)). From the list of 21 teachers who returned the questionnaire, a group of seven teachers from a school, who kindly consented to be interviewed, participated in responding to the following set of questions online. The teachers were requested to download and answer the attached file containing the following questions:

TABLE 7: Online open-ended questions for selected ESL teachers

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#### **Open-ended questions**

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##### **Theme 1: Implementing SSC innovation**

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1. Share with me your understanding of the SSC?
  2. Does the SSC fit in with your own daily routine in school? Explain. Why and why not?
  3. What have been some of your successes with implementing the SSC?
  4. What are some of the challenges that you face?
-

To facilitate greater discussions, participants were also invited to contribute their opinions to an online discussion board asynchronously relating to their experiences teaching in the Smart schools. The online discussion board yielded some interesting data. The following excerpts were selectively taken in verbatim from the open-ended responses of Teacher 2 (T2), Teacher 3 (T3), and Teacher 7 (T7), provides a flavour of some of the responses:

- T2: I want to learn but I feel I don't have enough time because human that I am I do feel tired. The activities that I have outside the curriculum are very tiring because they require personal attention to students and training and all that. So because of the exhaustion and all that I can't focus on what to do on the computer.

[T2 Jay: Line 87–91]

- T3: Basically we are bogged down with so much of work and our main aim is to finish the syllabus and of course between that a lot of activities, tests and a hundred and one things . . .

[T3 Maggie: Line 57–59]

- T7: We are doing a lot of clerical stuff, like keying in students' data in the computer. It's like double entry because we have to do the same thing in our register and the SSMS (Smart School Management System). It's redundant. We are doing double work. We are writing and rewriting the same thing. A lot of redundant work and it's a big burden to us. Every free period we get we have to go to the computer and then do our lesson plans . . .

[T7 Susie: Line 251–275]

As can be seen, the teachers were concerned about themselves, the processes and tasks involved in implementing the innovation such as those relating to organizing, managing, and time demands. Corroborating these with the concerns data discussed earlier, it appears that some of the ESL teachers exhibited considerably intense levels of “self” and “task” concerns (Hall and Hord 1987, 2001), especially in terms of making the SSC work at the classroom implementation level.

## **Discussion**

The teachers in this study expressed greater informational/personal, management, and consequence/collaboration concerns. It appears that these teachers wanted to know more information about SSC, i.e., what SSC is and how using it affects them. These expressions of concerns were typical of a nonuser or inexperienced user. The peaking at *Stage 4—Consequence/Collaboration* concerns by teachers who had been implementing the SSC for a few years indicated that these teachers were beginning to be concerned about the impact of the SSC on learners. It shows there are some teachers who are experienced enough in their implementation are now reassessing and refocusing their concerns on improving the impact of the innovation on their students. Although Stage 4 concerns was the peak of concerns, the close second and third highest peaks at Stage 2 and Stage 3 respectively, should also be noted.

The second highest peak at Stage 2 implies that there are still many teachers who are still concerned about the benefits, requirements for use, and personal commitment to the innovation. Such a trend is worrying as it implies that there are some teachers who are still uncertain about the innovation and are crying out for more support and help.

It should also be noted that Stage 3 concerns are also high, implying that there are certain teachers who are still worried about issues such as the best use of information and resources, scheduling, time, and organization.

Regardless of the level of concerns about the SSC, teachers also show they have refocusing concerns, i.e., ideas about improving the SSC that would make it work better. This phenomenon is more indicative of experienced users of an innovation who have used the innovation with efficiency for some time and are concerned with finding better ways to impact learners. One explanation for this phenomenon in this study may be a lack of a basic understanding or knowledge about the SSC that may have resulted in a lack of sufficient training. Rogers (1995) suggested several reasons for re-invention of an innovation that may apply to these findings: (1) the complexity of the innovation; (2) a lack of detailed knowledge about the innovation; (3) an innovation with many possible applications; and (4) an innovation that is implemented to solve a wide range of problems.

Another important point to note regarding the multiple-peak profile is the need for attention by change managers and the Education Department. The high management concerns indicate that those teachers with more than

five years experience with SSC are having difficulties doing what was required by the new curriculum. Also, high consequence/collaboration and refocusing concerns indicate that the teachers had ideas about improvements on SSC. However, according to Hord *et al.* (1987), teachers with this kind of multiple-peak concerns profile often believe that it would be better to return to the old practices (Cheung and Ng 2000,119). It appears that change agents and the Education Department need to think of intervention strategies to allay these teachers' concerns and helping them to channel their ideas in productive ways.

The findings of the study support the position that teachers' concerns and perceptions of SSC influence the way in which they implement the SSC. Implementation of SSC does not happen by itself. The SSC implementation is a complex and prolonged process that must be nurtured and sustained.

For schools to experience significant change or reform due to the integration of computer technology in classrooms, the existing instructional concerns and practices of teachers must be carefully considered. Long-term in-service training based on the stages of concerns theory is needed; short-lived "hit and run" in-service effort is bound to fail (Cheung and Ng 2000,119).

### **Limitation of Study**

Obviously, the present study, due to its limited sample size only yielded limited information regarding the status of the innovation and therefore may not provide enough useful suggestions for appropriate interventions. But, further data from study involving a larger sample size would certainly provide a more accurate snapshot of the implementation phenomenon of ESL teachers in their classes. Qualitative data via interviews and observations from actual classroom practices would also help to triangulate findings obtained from SoCQ.

### **Implications for Curriculum Implementation**

There are several implications for curriculum implementation that can be drawn from the results of this study. Firstly, it is important for policy makers, teacher trainers and change agents to recognize that teacher concerns are natural

occurrences with a new curriculum, no matter what the curriculum is. Any curriculum innovation thus would entail developmental growth in teachers' feelings about the innovation. However, the positive thing about this revelation is that teacher concerns largely occur in measurable sequential stages, therefore making it possible for the relevant change agents and Education Department to anticipate them during the curriculum implementation process.

An important message for policy makers, Education Department officers, and change agents involved in overseeing the implementation of the SSC innovation is for them to understand that "self" concerns (i.e., the indifference and informational/personal concerns) are a fully legitimate part of the process of curriculum change. The Education Department and other change agents should not blame teachers for not implementing the innovation as planned but rather devise at the outset of the change effort to help teachers resolve their "self" concerns and to facilitate movement towards "task" and "impact" concerns.

Another important point to note is that teachers themselves should have the awareness that it is not a sin if they have "self" concerns about a new curriculum. They need to understand that their concerns are just a natural reaction to any change process. Since not many teachers understand their own developmental progression of concerns, it appears then that greater dissemination of the concerns theory need to be done.

## **Conclusion**

The adoption and implementation of a new innovation requires time and appropriate intervention strategies to be successful. This study has presented a model for understanding and assessing the implementation of a technology-enhanced curricular innovation. The concerns-based approach requires the understanding that a school does not change until each individual changes throughout the whole system (Hall and Hord 1987). Concerns data, along with other data, can provide a foundation for a ground-up approach to effect systemic change in education.

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**The 22-item Stages of Concerns (SoC) Questions**

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**Stage 1—Indifference**

- 1 I don't even know what SSC is
- 6 I am not concerned about the SSC
- 11 I am completely occupied with other things
- 17 At this time, I am not interested in learning about the SSC

**Stage 2—Informational/Personal**

- 14 I would like to know what teachers are required to do
- 16 I would like to know the time and energy commitments required to implement the SSC
- 20 I would like to know how my role will change when I use the SSC
- 21 I would like to know why the SSC is better than the KBSM curriculum
- 22 I would like to know how the SSC differs from the KBSM curriculum

**Stage 3—Management**

- 2 I am concerned about not having enough time
- 3 I am concerned about how to accomplish effectively the obligations of the SSC
- 7 I am concerned about my inability to manage all the SSC requirements
- 13 I am concerned about time spent on non-academic matters related to the SSC

**Stage 4—Consequence/Collaboration**

- 9 I am concerned about evaluating my impact on students
- 5 I would like to develop working relationships with other teachers
- 8 I would like to familiarize others with the progress of the SSC
- 15 I would like to coordinate my teaching with other teachers

**Stage 5—Refocusing**

- 19 I would like to use feedback from students to change the SSC
- 4 I am concerned about revising the SSC to improve its effectiveness
- 10 I would like to revise the SSC instructional approach
- 12 I would like to modify the SSC based on students' learning experiences
- 18 I would like to determine how to supplement, enhance, or replace the SSC