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# Time Will Tell on Issues Concerning Faculty and Distance Education

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## Abstract

Technology-based distance education (TBDE) is increasingly being used to supplement higher education needs and this is raising a variety of concerns in universities. This study examined the differences in the concerns expressed by instructional faculty of three comparable universities that differ primarily in their stages of implementing distance education. The results showed statistically significant differences among the universities' faculty concerns. The findings were congruent with one facet of the Concerns-Based-Adoption Model which states that "stage or stages where concerns are more (and less) intense will vary as the implementation of change progresses" (Hord, Rutherford, Huling-Austin, & Hall, 1987, p.30). They also reflected the "implementation dip" that postulates that conditions often get worse temporarily before they improve in a change process (Fullan, 1991, 1996).

As the world shifts from the Industrial Revolution into the knowledge revolution, higher education, as a major societal resource, is being sought to an extent never before witnessed (Oblinger & Verville, 1998). Just as the employment of children was the perpetuating force of the industrial society, the education of adults is the stimulus of the emerging information or knowledge society (Dillon, 1989). The challenge to higher education systems, therefore, is to provide increased access to educational opportunities, often with no additional resources. One way for higher education to meet this challenge is by incorporating technology-based distance education, which allows for the immediate expansion of educational access and is capable of maintaining cost effectiveness in the long term (Twigg & Oblinger, 1996). This would appear to be a well-embraced solution except for the omission of one key component, the complexity of adequately preparing the individuals who are directly impacted by such an educational change, namely, the university administrators, instructional faculty and the students themselves.

This article focuses on the intricacy of faculty preparedness for technology-based distance education (TBDE) from the perspective of their concerns and how these concerns vary with time. The spotlight is on faculty as they are the key element in the teaching and learning process (Rockwell, Schauer, Fritz, & Marx, 1999) providing instructional leadership, instructional design and detailed programs necessary for successful implementation of distance education (Olcott & Wright, 1995). In addition, this study investigated faculty concerns at various stages of implementation on the premise that concerns vary over time. This study sought to illuminate some of the concerns expressed by faculty at various phases of implementing technology-based

distance education (TBDE). The study was conducted in the hopes of adequately preparing both administrators and faculty for individual challenges often overlooked in the adoption of innovations so as to facilitate the change and consequently provide a smoother transition for faculty, administrators and students.

## **Method**

### *Participants*

Out of the one thousand "Stages of Concern Questionnaire" (SoCQ) surveys randomly distributed to instructional faculty of three comparable universities, three hundred and thirty-four (33.4% response rate) were completed and returned to the researcher. The respondents to the survey volunteered to participate. The reason why a randomly selected participant opted to participate in the study and another did not is a form of self-selection. In self-selection, internal validity is affected as there is always a chance that some unintentional bias may have occurred and thus, the results may reflect only those subjects who, for some reason, participated.

All three universities are accredited by the Southern Association of Colleges and Schools (SACS), that ranks them as level VI institutions. The Southern Regional Educational Board (SREB) classifies them as public 4-year institutions and each has a Carnegie classification of doctoral/research. Each university has relatively the same amount of funding in relation to its student population. Although each university was awarded the Pew Grant Program in Course Redesign (PGPCR-\$200,000) over the past 3 years, the major factor among the universities that was under investigation was the differences (if any) in concerns expressed at the different universities that are at different phases of the grant. Phase I describes an institution that has provided at least 3 years of PGPCR support to faculty in technology-based distance education, phase II indicates 2 years of PGPCR support and phase III indicates PGPCR support of at least one year. For the purposes of this study, the university examined that was at phase I will be referred to as U-1, the university in the study that was at phase II will be referred to as U-2 and U-3 will represent the university that was at phase III. The number of instructional faculty of U-1 (phase I) who returned usable SoCQ data to the investigator was 99; usable data from U-2 (phase II) was 106; and U-3, the university at the initial phase, phase III, returned 128 of the 334 questionnaires that it received.

### *Instrumentation*

The Stages of Concern Questionnaire (SoCQ), an instrument used to determine the concerns of educators with respect to innovations, is based on the Concerns-Based-Adoption Model, (CBAM). CBAM postulates that for effective educational change to occur in the adoption of an innovation, there must be a change-facilitator who probes potential users to find out what their needs (concerns) are and uses available resources to meet these needs (Hord, Rutherford, Huling-Austin, & Hall, 1987, p.30). CBAM outlines seven stages of concern in educators about to embark upon an innovation. The first of the developmental stages, Stage 0, is the Awareness Stage in faculty, expressed in the following statement: "I am not concerned about technology-based distance education." The second stage, Stage I, is the Information Stage that expresses faculty sentiment, "I would like to know more about technology-based distance education." The concern expressed at the Personal Stage, Stage II, is "How will using it affect me?" At Stage III, the Management Stage, faculty express concern about spending a great proportion of their time getting material ready. The Consequences Stage, or Stage IV, is the stage where faculty concerns center around "How is my use affecting students?" From Stage IV through Stage VI, faculty concerns are focused on the impact of technology-based distance

education. The Collaboration Stage (Stage V) reflects the faculty feeling "I am concerned about relating what I am doing with what other instructors are doing," and the Refocusing Stage, Stage VI, expresses the faculty concern "I have some ideas about something that would work even better." The alpha coefficients of internal consistency for each of the seven stages of concern scales reflect internal reliability. They are as follows: Stage 0 = .64; stage I = .78; stage II = .83; stage III = .75; stage IV = .76; stage V = .82; and stage VI = .71 (Hall, George, & Rutherford, 1979). One of the many ways in which Hall et al. (1979) demonstrated evidence for the validity of these stages as separate constructs came from two correlational analyses. The first indicated that 83% of the items correlated more highly with the stage to they had been assigned than with the total score of the instrument. The second analysis indicated that 72% correlated more highly with the stage to which they had been assigned than with any other stage. There are several ways to score the SoCQ. For the purposes of analyzing the data in this study, the "profile interpretation" approach was used where the relative intensity of a concern ranges from 0 to 100, with 0 as the lowest level of concern and 100 the highest level of concern attainable.

The researcher obtained permission from the SoCQ developers to include demographic items to the survey. One such item determined whether respondents taught, intended, or were undecided about using technology-based distance education as part of their instruction modes. Results based on the analysis of data obtained from this item (item response rate = 27.5% or N=275) are included in the findings of this study.

## Results

An analysis of the data using descriptive statistics revealed that the means of the concerns about technology-based distance education expressed at all three universities decreased progressively from Stage 0 through Stage 5 of the CBAM. However, there was a slight increase in the means of all three universities from Stage V to Stage VI of the CBAM developmental stages of concern. The statistical means of concern and standard deviations of the universities are presented in table 1.

**Table 1. University Means of Concern and Standard Deviations**

Universities						
	U-1 (n = 99)		U-2 (n = 106)		U-3 (n = 128)	
Stages (SoC)	M	SD	M	SD	M	SD
0	78.48	22.26	81.88	18.22	78.84	19.61
I	66.43	19.61	70.62	18.21	74.41	18.14
II	66.47	21.46	69.57	20.53	73.73	21.63
III	66.67	23.66	58.88	26.95	62.52	26.25
IV	46.31	24.67	35.49	25.69	42.38	25.84
V	35.08	24.07	31.78	26.69	40.61	29.45

In order to determine if there were any differences in the concerns expressed about TBDE among the faculty of the three universities, a multivariate analysis of variance (MANOVA) was used to compare the means of faculty concern about technology-based distance education at the three universities in the study. A statistically significant difference was found among the three universities at the .001 level,  $F(14, 650) = 3.126, p < .001$ . Protected F tests indicated that the differences in concerns among the faculty of the three universities were statistically significant in Stages I, II, IV, V and VI (see Table 2).

**Table 2. MANOVA of Stages of Concern Among Faculty of Three Universities**

Source (SoC)	df	F	p
Stage 0	2	.926	.397
Stage I	2	5.134	.006**
Stage II	2	3.335	.037*
Stage III	2	2.345	.097
Stage IV	2	4.798	.009**
Stage V	2	3.195	.042*
Stage VI	2	3.828	.023*
Error	330		

\* $p < .05$ , \*\* $p < .01$

Multiple comparisons were carried out using Tukey's HSD test for each stage of concern (see Table 1 for means). The analysis revealed that there was a statistically significant difference between the average Stage I concern for U-1 and U-3 at the .01 level of significance. The mean of the Stage I concern at U-3 was greater than the average Stage I concern at U-1. Faculty of U-3 would like to know more or do not know as much about technology-based distance education as do the faculty of U-1.

Statistically significant differences were found to exist between the average Stage II concern for U-1 and U-3 at the .05 level of significance. The mean of the Stage II concern at U-3 was greater than the average Stage II concern at U-1. Faculty at U-3 are more interested in knowing how technology-based distance education would affect them personally than the faculty at U-1.

In the fourth stage of the Stages of Concern, statistically significant differences were found to exist between the average Stage IV concern for U-1 and U-2 at the .01 level of significance. The mean of the Stage IV concern at U-1 was greater than the average Stage IV concern at U-2.

Faculty at U-1 are more interested than the faculty at U-2 in knowing how technology-based distance education is affecting their students.

The results of the multiple comparison revealed that in Stage V no statistically significant differences existed between the means of U-1 and U-2 or between U-1 and U-3. A statistically significant difference did exist however between U-2 and U-3 at the .05 level of significance. The mean of U-3 at this stage was greater than the mean of concern at U-2. Faculty at U-3 are more concerned about collaboration with other instructors in the use of technology-based distance education than the faculty at U-2.

Finally, at Stage VI, no statistically significant difference was found between the mean of U-1 and U-2 or between U-1 and U-3. However, a statistically significant difference was found to exist between the average Stage VI concern for U-2 and U-3 at the .05 level of significance. The mean of the Stage VI concern at U-3 was greater than the average Stage VI concern at U-2. Faculty at U-3 are more convinced than the faculty at U-2 that they know of better means of instruction than the use of technology-based distance education.

Further analysis was done using chi square to investigate the intent of faculty of the three universities. The findings were found to be significant at the .05 level ( $\chi^2 = 13.55$ ,  $N = 275$ ,  $df = 6$ ,  $p < .035$ ) and they are presented in Table 3.

**Table 3. Descriptive Summary of University Faculty and Intent**

	U-1 n = 87		U-2 n = 86		U-3 n = 102	
Intent	Frequency (f)	%	Frequency (f)	%	Frequency (f)	%
Teach now	25	28.7	13	15.1	26	25.5
Teach later	23	26.4	19	22.1	33	32.4
Not teach	33	25.3	36	44.9	33	32.4
Undecided	17	19.5	18	20.9	10	9.8

Presently, of the three universities examined in this study, faculty of U-1 are using TBDE the most, followed closely by the faculty of U-3. The percentage of U-2 faculty currently using TBDE to teach is the lowest of the three universities. The greatest percentage of faculty who intend to use TBDE later are found in U-3 followed by U-1, with U-2 with the least. According to the findings, one can find the greatest percentage of instructional faculty who are unwilling to teach using TBDE at U-2 followed by U-3 and then U-1. About the same percentage of instructional faculty at U-1 and U-2 are undecided about using TBDE and the percentage at U-3 has the least undecided faculty.

## Discussion

First, this research found that the greater concern expressed by faculty at U-3 in comparison to the faculty at U-1 for CBAM stage I and II were statistically significant. U-3 is a university in a relatively early stage of implementing TBDE in comparison to U-1. The stated finding is in agreement with the statement “When a change effort is in its early stages, (faculty) are likely to have self-concerns, namely stage I, informational and stage II, personal” (Hord et al., 1987, p.31). The literature related to the finding also reflected that U-1 was further along in its use of TBDE than U-3.

Secondly, at Stage IV of the SoCQ dimension of CBAM, faculty of U-1 were more concerned about the impact of TBDE on their students than U-2. According to Hord et al. (1987), it is “only after management concerns have been reduced in intensity can impact concerns be expected to intensify” (p.32). The implication of this is that both U-1 and U-2 have established effective managerial support of TBDE for their faculty. In addition, this finding also implies that U-1 has in place a better-managed TBDE system than U-2.

In the third finding, Stages V (collaboration) and VI (refocusing) showed significant differences among faculty. The research study revealed that the faculty of U-3 expressed more concern at these two stages than U-2 and that concerns associated with U-1 were not statistically significant. Literature supports these findings. First, according to Hord et al. (1987), many teachers will never have intense concerns at stage V or VI ... Teachers who have no opportunity or need for collaboration may never experience concern at stage V ... (and it is) when faculty have used TBDE with efficiency for some time (that) they may become concerned about finding even better ways to reach and teach students. (p. 32)

It may be assumed, therefore, that although faculty at U-1 may have the most established TBDE support system of the three universities, the faculty have not used TBDE long enough to modify it. It could also be that modifications in TBDE are not usually determined by faculty but by the rapid changes associated with technology itself (Oblinger & Verville, 1998). In regards to lack of concern about collaboration, faculty at U-1 may have an effective collaboration system which does not warrant faculty concern.

In regard to U-3 expressing more concern about collaboration and refocusing than U-2, there are several plausible implications. U-3 and U-2 are at or close to the initial stages of implementing TBDE in comparison to U-1. A collaboration system may not be in place, or the system in place may be in its initial stages and so may not be effective at its present state of development. In regard to stage VI, most faculty at U-3, in this initial stage of TBDE, may consider methods or ideas they are more familiar with, such as the traditional methods of instruction in higher institutions (Kerr, 1994) to be better than TBDE.

Findings also revealed that U-1, the university currently with the least faculty concerned with self (stage I and II concerns) to be the university with the greatest percentage of faculty participating in or using TBDE to teach. U-1 also has the lowest percentage of faculty who do not intend to use TBDE. U-2, in its second year and second phase of PGPCR exhibited the lowest percentage of faculty (15%) presently using TBDE to teach and the greatest percentage of faculty who will not use it teach (45%). This was expected as, according to Fullan (1991, 1996), the process of change experiences an “Implementation Dip” where situations will get worse before they get better. The second year of educational change or adoption of an innovation is often the most trying. It is the period of concern about management (getting accustomed to new processes, stage III), consequences on students (students’ performance falls as they have had to master both format as well as material, stage IV), collaboration (educators need mentors, stage V) and refocusing (abandonment of the project and reverting to the old and the familiar, stage VI).

Institution morale is often so low and returns are so poor during this period that most education administrators are often forced to abandon innovations at the second phase. Proper implementation of an innovation requires it being allowed to go through all of its phases. Hord et al. (1987) inferred that “innovations fail not because the concepts and processes proposed were faulty, but because they were never properly implemented” (p. v). The relatively high percentage of U-3 (25%) faculty currently teaching with TBDE, reflects the enthusiasm that some educators exhibit at the early stages of an innovation typically seen before the downward trend (or plateau) as seen with U-2.

The implications and conclusions derived from the findings of this research must be viewed with the limitations of the study in mind. The limitations to the study include the possible threats to internal validity due to factors such as self-selection of participants, differences in training at each institution, variations in faculty experience with technology, etc. that may have affected the outcome. It is impossible to ensure 100% causality. The implications described are based on the assumption that the three different universities differed mainly in terms of how many years they had been implementing instructional technologies.

One implication for educators and educational administrators are an awareness of the challenges that accompany phase II (e.g., U-2) of the adoption of an innovation so as to better prepare for the challenge. Educational administrators in the process of adopting an innovation (e.g., U-3) ought to focus on allaying faculty self-concerns to get educators to participate. To get faculty who are contemplating the use of the innovation at a later time, TBDE educational administrators ought to concentrate on management concerns (e.g., U-2 and U-3). A comment written by an academic facilitator of U-3 clearly implies that U-3 is aware of management concerns. The comment stated that the “distance education program at U-3 was fragmented with one department handling SREB factors and scheduling, another department training and server support and academic affairs works on policy and faculty. Very confusing organizational structure!”

In conclusion, the research findings agree with Hord et al.’s (1987) statement “the stage or stages where concerns are more (and less) intense will vary as the implementation of change progresses” (p. 30). Knowledge of stages of concern and appropriate interventions better equip educational administrators for their facilitative roles. They also reflect the reality of the Implementation Dip (Fullan, 1991, 1996). Prior awareness of this dip and preparation of all concerned for this dip by educational administrators will not eliminate its effects but will make the period more manageable and less destructive to the process. It is vital to identify and properly confront prohibiting forces such as concerns in order to empower faculty to engage in active distance teaching (Dede, 1990) if higher education is to meet its goal of broadening education access.

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