Who's on First in Distance Education?

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Abstract

The study sought to assist higher education administrators in investment decisions on distance education programs among its schools. The focus of the study was to determine differences in schools within public 4-year universities in the use of technology-based distance education (TBDE). Specifically, the study examined the differences with respect to interest, knowledge, administration, extension or enhancement; as well as a perceived impact on self, students, and interdisciplinary activities. The results revealed that a greater proportion of nursing faculty taught using TBDE than faculty of other schools. The nursing and education faculty showed greater TBDE interest, enhancement, and concern for its impact on students and faculty collaboration, than the faculty of the other schools. The findings reflect the characteristics of groups predisposed to the use of TBDE in instruction, i.e., educators inclined to use the facilitative approach in instruction, who have a great need to increase the number of their graduates in the field; and who tend to have adult-learners as students. The faculty of the schools of nursing and to a lesser extent the faculty of the schools of education fit this profile.

Introduction

The purpose of this study was to determine which schools in the public 4-year higher education setting, despite the prohibitive factors and costs of investing in technological-based distance education were most likely to utilize Technology-Based-Distance-Education (TBDE) to the fullest, reflecting the twenty-first century trends and negating the prohibitive costs. Such a school could serve as a pioneer in TBDE or the initial focus of TBDE in institutions of higher education interested in investing in distance learning.

The Drive for Distance Education and 21st Century Trends in Higher Education

"Distance learning which was once a poor and often unwelcome stepchild within the academic community is becoming increasingly more visible as a part of the higher education family" (Phipps & Merisotis, 2000, p.7). The rise in the delivery of technology-supported instruction over distance is a revolutionary opportunity to increase access to postsecondary education and an opportunity to hasten the overall pace of reform in higher education (National Education Association [NEA], 2000). Furthermore, universities meet two of their greatest challenges, namely taking advantage of the power of digital technology and keeping up with the "information revolution" (Allen, Hartman, & Truman, 1997; Hooker, 1997), when they use digital technology in distance education practices. In a study conducted by Allen and Seaman (2008), findings revealed that almost two-thirds of all higher education institutions in the United States offer online courses and/or programs in order to remain competitive with other institutions of higher learning and to fulfill the diverse needs of today's students.

More specifically, the trend shows that public 4-year higher education institutions' steady growth in the

use of TBDE surpasses other institutions of higher education. According to the National Center for Education Statistics Report (2000) on distance education at postsecondary education institutions, approximately a third (1,680) of the existing 5,010 institutions offered distance education courses; 20% planned to offer them in the subsequent three years; and 47% did not offer and did not plan to offer them in the subsequent three years. Out of the 1,680 institutions of postsecondary education institutions that offered distance education (DE), public 4-year institutions offered DE the most (78%) followed by public 2-year institutions (62%); 75% of private 2-year institutions did not offer it and did not plan to do so in the near future. More recently, over 3.9 million students took at least one online course during the fall 2007 term, a 12 percent increase over the number reported the previous year (Allen & Seaman, 2008).

The Prohibitive Costs and Other Deterrent Factors

According to Brill and Galloway (2007) "many universities strive to integrate appropriate technologies into campus classrooms. Despite sizeable investments in hardware, software and supporting infrastructures…" (p.95). Taylor, Parker, and Tebeaux (2007) express the following demise,

> From a financial perspective, public universities face at least two major dilemmas:
> 1. providing financial support for faculty and teaching units preparing courses for distance delivery, and
> 2. determining pricing strategies that must follow state-mandated guidelines while remaining cost-effective to university budgets, which are always under stress. (p.17)

Additional institutional costs include faculty release time and the cost of assisting faculty in converting courses for distance delivery. "Professionals such as DE librarians and student services personnel are needed to meet the needs of DE students. Many colleges and departments have added not only equipment but also Webmasters, instructional designers, and media experts to assist faculty" (Taylor et al., 2007, p.17). There are obvious hardware and software costs, but there are also the hidden costs such as supplies consumed, administrative approval time (Morgan, 2000), discounted tuition rates, lower-than-expected initial enrollments, and the continued expansion of the universities' operations which contribute to the expense of distance learning (Carr, 2001). The cost of TBDE instruction exceeds traditional instruction costs. Statistics reveal cost as the most prohibitive factor accounting for 43% of the hindrance to institutions' initiation or expansion of TBDE course offerings or program development (NCES, 1997).

To compound the issue of cost, technological changes are occurring so rapidly that technological costs have become an annual institutional burden. Timing is fast becoming an important component in the technological age. In 1998, the momentum for change measured in Web years showed three months as the equivalent to a Web year in contrast to 18 months as the equivalent Web year in 1996 (Oblinger & Verville, 1998; Twigg & Oblinger, 1996). Yet the new technological gadgets do not replace the old, they become additions to tools currently in use. For example, the Elmo projector, a document camera, does not replace the smartboard; it is an addition. Online collaboration systems, such as Elluminate, which allow students and faculty to hold live synchronous class sessions, are purchased in addition to "Blackboard," an online proprietary virtual learning environment system. Educational or academic leaders hold an important role in promoting and supporting technology and distance learning through limited budgets (Allen & Seaman, 2008).

The "Catch-22" of Distance Education in Higher Education

The dilemma ("Catch-22") for educational leaders in instituting TBDE in higher education is on the one hand, the need for it as a vital component of *21st century education* and on the other, the negating factors like *cost*. Could there be instances where some schools' benefits and use of TBDE reduce or negate the cost?

In this study, the researchers explored the schools typically found in public 4-year institutions to determine whether or not there were certain schools whose faculty demonstrated openness to the implementation of technology-based distance education and who were consequently willing to grow their offerings and enrollments using TBDE. It also attempted to explain why some schools were more successful at integrating technology-based distance education (TBDE) than others, regardless of cost.

Method

Design

The study attempted to determine whether differences in faculty members' affiliation with the schools/schools (independent variable) had an impact on subsequent differences in faculty concerns or intent to use TBDE in instruction (dependent variables). The ex post facto design was used since manipulation of the independent variable was not feasible (McMillan & Schumacher, 2006) and comparisons of the outcomes would be made among the various schools (Wiersma & Jurs, 2005). A survey was used to collect cross-sectional data from a random sample. The data collected provided numeric descriptions of trends, attitudes, or opinions to infer about the population (Creswell, 2003).

Participants

Out of the 1000 instructional faculty members randomly selected to take part in the study, 295 volunteered information on their views of and participation in TBDE. The respondents were composed of 60% male and 40% female instructional faculty. They also comprised faculty members in the following schools: nursing, technological sciences, education, performing arts, medical sciences, arts and sciences, and business (See Table 1). This self – selection process of the participants impacted the internal validity of the study, however the sample size provided power of .89 to the study, at the .05 level of significance and assuming a moderate effect size.

The participants were from three comparable 4-year public universities associated with both the Pew Grant Program in Course Redesign (PGPCR) for instructional-technology integration and the Southern Regional Educational Board (SREB). The reason for selecting universities affiliated with these two organizations was to ensure that the universities were similar in areas relevant to this study, namely, the technological approach to instruction, educational trends, expectations, and standards, and regional characteristics.

Table 1

Number of Respondents per School

Schools	Number of Respondents
Nursing	21
Technological Sciences	41
Education	44
Performing Arts	40
Medical Sciences	27
Arts & Sciences	101
Business	21

Instrumentation

The survey used in the study was the *Stages of Concern Questionnaire (SoCQ)* which was developed by the Southwest Educational Development Laboratory, SEDL. SoCQ is based on the Concerns-Based Adoption Model (CBAM) which looks at the level of use, its configuration, and the stages of concern expressed by users and nonusers of innovations in educational environments. For the purposes of this study SoCQ provided information on the stages of concern experienced by users, nonusers, and potential users of the educational innovation TBDE. Table 2 shows the dimensions and stages of concern that SoCQ investigates. The SoC Questionnaire is a 35-item paper-and-pencil measure consisting of seven subscales with test-retest correlations ranging from 0.65 to 0.86 and estimates of internal consistency ranging from 0.64 to 0.83 (Hall, George, & Rutherford, 1998). The calculated scores on the SoCQ are percentile mean scores.

Table 2

Stages of Concern: Typical Expressions of Concern about the Innovation

Dimension	Stages of Concern	Expressions of Concern
Impact	VI Refocusing	I have some ideas about something that would work even better
	V Collaboration	I am concerned about relating what I am doing with what other instructors are doing
	IV Consequences	How is my use affecting students?
Task	III Management	I seem to be spending all my time getting material ready
Self	II Personal	How will using it affect me?
	I Informational	I would like to know more about it
	0 Awareness	I am not concerned about it (the innovation) or interested in it

Hord, S., Rutherford, W., Huling-Austin, L., & Hall, G. (1998)

Procedure

Upon receipt of approval from the Institution's Review Board on Human Subjects, the researchers mailed out the surveys to the potential participants. Participants could withdraw at any time without penalty and were assured of confidentiality. Participants mailed back anonymous surveys in stamped, pre-addressed envelopes that had been provided by the researchers.

Results

Data analysis was deductive, seeking generalizations from the sample data. The level of significance was set at .05. The study yielded the following results on the stages of faculty concerns on the use of TBDE in instruction across schools/schools of public 4-year institutions.

A descriptive statistical analysis of the data revealed a gradual decrease in the percentile means of faculty concerns about technology-based distance education and an increase in relative dispersion for all of the colleges from Stage 0 through Stage V. Demonstrating that on the average, all faculty felt a greater concern in the earlier stages than the latter stages of CBAM and that faculty showed more variation in their feelings in the latter stages than in the earlier stages of concern. Table 3 presents the respective means of the Stages of Concern and standard deviations of the similar schools across the three universities.

Table 3

Summary of School Means (M) of Concern (C), Standard Deviation (s) and Numbers (n)

Schools/Schools														
	Nursing *n*=21		Tec/Sci *n*=40		Education *n*=44		Perf/Arts *n*=40		Med/Sci *n*=27		Arts/Sci *n*=101		Business *n*=21	
Stage	M	s	M	s	M	s	M	s	M	s	M	s	M	s
0	64	24	81	18	75	22	79	19	80	19	85	17	82	19
I	71	22	72	18	75	20	75	20	71	20	67	18	67	16
II	78	18	72	21	72	21	77	22	68	22	66	23	69	18
III	61	25	67	25	65	23	54	27	65	27	60	28	72	18
IV	54	28	36	23	52	29	44	26	43	23	34	22	42	27
V	50	28	29	27	45	29	37	30	35	22	27	22	41	30
VI	53	21	50	27	49	27	45	27	44	23	34	26	45	20

To determine whether there were differences in the faculty concerns about technology-based distance education among the different schools, a MANOVA was used to compare the means of concern at the various stages of concern. A statistically significant difference was found among the seven stages of concern and the categories of schools at the .001 level, $F(42, 1722) = 2.166$, $p < .001$. Consequently, the hypothesis, which postulated that there would be no statistically significant differences in the concerns expressed about technology-based distance education among the instructional faculty of the various schools was rejected. Further analysis using *F*-tests of between-subjects effects indicated that the differences in concerns among the schools were statistically significant in Stages 0, IV, V, and VI (see Table 4 for details).

Table 4

MANOVA of Stages of Concern among Faculty in the School/School Categories

Source	*df*	*F*	*p*
Stage 0	6	4.224	<.001**
Stage I	6	1.392	.218
Stage II	6	2.037	.061
Stage III	6	1.551	.161
Stage IV	6	4.260	<.001**
Stage V	6	4.435	<.001**
Stage VI	6	3.583	.002**
Error	288		

**$p < .01$

Multiple comparisons using Tukey's HSD were made among the school/school categories and Stages 0, IV, V, and VI of the Stages of Concern and the following pairwise differences were identified as having statistically significant differences in their means (see Table 3 for means).

Statistically significant differences $F(6, 288) = 4.224$, $p < .001$,existed between the following schools in Stage 0: nursing vs. technological sciences, nursing vs. arts and sciences, nursing vs. business, and education vs. arts and sciences. The mean for nursing faculty (M=64, SD=24) concern at Stage 0 was less than that of faculty in technological sciences (M=81, SD=18), arts and sciences (M=85, SD=17), and business (M=82, SD=19). The faculty of technological sciences, arts and sciences, and business express less interest (or more disinterest) in technology-based distance education than the faculty in nursing. The mean of concern at Stage 0 for arts and sciences (M=85, SD=17), is greater than the mean of faculty concern of education (M=75, SD=22) which indicates that faculty of the arts and sciences are less interested (or more disinterested) in technology-based distance education than education faculty.

At Stage IV, statistically significant differences $F(6, 288) = 4.260$, $p < .001$existed between the means of nursing and arts and sciences and between education and arts and sciences. Both nursing (M=54, SD=28) and education (M=52, SD=29) exhibit greater Stage IV concern than arts and sciences (M=34, SD=22). The nursing and education faculties are more concerned about how technology - based distance education is affecting their students than faculty of arts and sciences.

The fifth stage of concern indicates that statistically significant differences $F(6, 288) = 4.435$, $p < .001$exist between the means of nursing and arts and sciences as well as between education and arts and sciences. Both the nursing (M=50, SD=28) and the education schools (M=45, SD=29) are more concerned about relating what they are doing in technology-based distance education with what other instructors are doing in TBDE than the arts and sciences schools (M=27, SD=22).

At Stage VI of the stages of concern $F(6, 288) = 3.583$, $p < .002$ the mean of the arts and sciences (M=34, SD=26), is less than that of nursing (M=53, SD=21), education (M=50, SD=27), and technological sciences (M=49, SD=27). On the average, the faculty of nursing , education, and technological sciences are more focused on universal benefits of technology-based distance education, creative uses (enhancement), or have definite ideas about alternatives to the existing form of technology-based distance education as opposed to the faculty of arts and sciences.

Ancillary Findings

Further statistical probing was conducted using a 4 X 7 chi square test to determine whether particular schools were more likely to teach with TBDE than others. The two variables were *intent to teach using TBDE* (four levels) and *school type* (seven levels). The investigation revealed that the differences at the .05 level considering the intent to use TBDE by various types of colleges were statistically significant, $X2$ (18, N = 247) = 29.56, p = .042, V = .20. The summary of these findings are found in Table 5.

Table 5

Descriptive Summary of School/School TBDE Use and Intent

School/School														
	Nursing *n*=21		Tec/Sci *n*=40		Education *n*=44		Perf/Arts *n*=40		Med/Sci *n*=27		Arts/Sci *n*=101		Business *n*=21	
Intent/Use	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%
Teach now	5	26	8	27	9	26	8	22	6	25	19	22	4	22
Teach later	10	53	11	37	12	34	5	14	10	42	13	15	4	22
Not teach	1	5	9	30	9	26	16	44	5	21	34	40	8	44
Not Decided	3	16	2	7	5	14	7	19	3	12	19	22	2	11

Descriptive analysis revealed that faculty most likely to teach using TBDE now or later are the faculty of nursing (79%), medical sciences, technological sciences and education faculty (67%, 64%, and 60%, respectively). Those least likely to do so were faculty of performing arts (44%), business (44%) and the arts and sciences (40%).

Discussion

The discussion and the conclusions of this study should be considered within the following limitations: (1) selection bias, due to volunteer respondents' self-reporting and (2) use of public 4-year institutions in the southern sector of the United States. Overall, nursing emerges as the forerunner in the use of TBDE in southern public 4-year institutions of higher education, with the school of *education* ranking about second. These findings are reflected in the National Education Association (2000) report that public 4-year institutions were more likely than either public 2-year or private 4-year institutions to offer for-credit distance education courses in the health professions, education, engineering, agriculture and natural resources, and library and information sciences, respectively.

Further discussion of the results sought to answer the following two questions: Why would the school of nursing faculty be the most likely to use TBDE? Why would nursing and education faculty show greater (a) interest in TBDE; (b) concern for the impact of TBDE on students and faculty collaboration; (c) and enhancement of TBDE, than the faculty of the other schools?

Interest in TBDE

One major find of this study was that faculty of nursing and education were more interested in TBDE than the other schools, with nursing faculty showing a particularly strong interest. This finding may be attributed to one or a combination of the following circumstances: In 1965, the American Nurses Association (ANA) decreed that the baccalaureate level ought to be the minimum academic preparation for entry into the field of professional nursing. Although this established a desirable societal goal, Lewis and Cobin (1985) pointed out the frustration that resulted among practicing nurses who had no means available at that time to enable them to achieve this. It was not until distance education was made

available to nurses that significant progress was made and continues to be made to achieve this end. Then in 2004, the National League for Nursing (NLN) published a position statement entitled *A Call to Reform for Nursing Education*, which challenged schools of nursing of all types to examine long-held traditions about the education of nurses and specifically encouraged the use of technology. The NLN called on nurse educators to "design evidence-based curricula that are flexible, responsive to students' needs, collaborative, and integrate current technology" (2004, p. 47).

In addition, national studies have predicted the need for more advanced practice nurses and the Southern Regional Educational Board (SREB, 2001) has reported a shortage of nurse educators. Further, recruiting talented master's-prepared nurses into on-campus PhD programs proved futile as the nurses were established in excellent positions away from university campuses (Oncology Nursing Society [ONS], 2005). TBDE, an off-campus approach for attaining advanced nursing degrees, proved a viable option for overcoming this challenge.

Indeed, to meet the demands of changes in patient care and health issues, nurses must be lifelong learners and constantly seek formal educational programs (Oncology Nursing Society). Nursing education programs throughout the world are embracing distance education as a means to upgrade the educational credentials of large groups of nurses "in a timely manner without disrupting their employment" (Lewis & Farrell, 2005, p. 362) and with a limited number of faculty in nursing. TBDE is responding to the need for professional development in professions such as nursing, with a variety of programs (Zerwekh & Pepicello, 2000).

In regards to education, its interest in TBDE could be attributed to the reality that TBDE is at the forefront (Garrison & Shale, 1990) of educational change and learning. Thus, by virtue of the fact that TBDE is an educational tool and/or instructional method, education finds itself interested and involved. In addition, in a statewide study by Roblyer et al (2009) the findings revealed that virtual teaching experiences had a positive impact on face-to-face teaching practices, a so-called "reverse impact" phenomenon. Teacher perceptions indicated that three quarters of teachers who teach in both virtual and traditional environments feel that virtual experiences improved their practice in face-to-face classrooms.

Another explanation for the proportionately large interest in TBDE by nursing and education schools is to counter the workforce shortages facing nursing, nursing faculty, and teaching professions. More than 126,000 nursing positions are vacant in the United States, and the shortage is forecasted to increase to more than 500,000 positions by 2025 (Buerhaus, Potter, Staiger, & Auerbach, 2008). Several factors contribute to the shortages. First, nursing today goes beyond hospitals. It is on the brink of new opportunities. A degree in nursing can lead to every area of the health care industry including careers in public health, research, policy work, and consulting. The current aging workforce of nurses further compounds this. The average age of a nurse is 44-46 years, and about a third of the nursing workforce is over 50, which means they will be retiring with the baby boomers (Federal Division of Nursing, 2010). In addition, the population, which is comprised, of mostly baby boomers is getting older and sicker (Gallagher, A. & Holland, L., 2004). The field of medicine is advancing at a rate and in diverse ways that requires more nurses of diverse skills. According to the Bureau of Labor Statistics (2010), more than a half a million new nurses will be needed in the year 2018. According to the Australian Nursing Journal (2003),

> There is often a tendency for some countries to poach health professionals from other countries to meet their own shortages of health care professionals. The faculty seeks to reverse this trend by assisting other countries [through TBDE] to train their own health care professionals for practice in their own countries. (p.29)

Magilvy & Smith (2000) state that faculty _in particular nursing faculty_ acknowledge the strong potential of on-line education to facilitate access to remote students and nurses in rural America, urban settings across the United States and Canada, and worldwide. They viewed this option as a positive way to recruit students and also to make an impact on the healthcare delivery and evidence-based practice in rural areas, developing countries as well as developed countries.

In regards to education, some of the causes of teacher shortage include retiring baby boomers, unattractive salaries, increased accountability, and increasing enrollments in schools (NCES, 2005).

According to the National Education Association 2.4 million teachers will be needed in the next 11 years (NEA, 2000). Over the past 10 years, the number of teachers in the United States has increased by 360,000 (NCES, 2010), with approximately a 2 million deficit.

Impact of TBDE on Students

Another major finding of this study was that the faculty of nursing and the faculty of education showed more concern for the impact of TBDE on students than the faculty of arts and sciences. It may be inferred that educators are by profession usually concerned about instructional effectiveness on students. In a study, Coose (2010) found that nursing students taught on campus (traditional) and those taught off site (TBDE) performed comparably on achievement data and examine effectiveness. No statistically significant differences were found between on-campus and distance-delivery participants' mean responses related to effectiveness. Results indicated that the distance group viewed the benefits of their educational delivery methods significantly more positively than did the on-campus group.

Extension of TBDE

It was not surprising therefore that the findings of this study also indicate that faculty of nursing and education is looking for ways to improve TBDE in reaching and teaching students. Ironically, faculty of technological sciences who were found to be less interested and less involved in TBDE were more interested in innovative and creative ways for using TBDE. One explanation for this is that faculty of technological sciences are trained in the advanced uses of technology consequently, the use of TBDE in itself would be rudimentary to the technological sciences faculty. However, seeking more intricate and effective ways of using TBDE in the field of technology would be more in accordance with their professional goals.

TBDE is also a significant means to increasing access to education for adult, working students who represent a growing proportion of the undergraduate nursing population (American Association of Colleges of Nursing, 1999). Nursing programs invoke the androgogical instructional style (Lewis, 2000) as the average age of a nursing student is 31 years. Such students include those who primarily prefer to learn constructively and those who would be referred to as “adult learners” and who prefer the androgogical approach of instruction. According to Lewis (2000), the androgogical method of instruction is a relaxed, informal climate, where collaboration is encouraged; the teacher and the class set goals; learning is by activities; and inquiry projects and evaluation are by teacher, self, and peers. Adult learners who, according to Knowles (1975), are self-directed, exhibit a readiness to learn, possess a mounting reservoir of experience from which to draw, and are keen to apply knowledge immediately, respond favorably to the androgogical style. The androgogical style learner is similar to the constructivist learner, who is independent, poses questions and problems, and through the process of experiencing the world and collaboration to obtain answers, constructs knowledge. Consequently, students who exhibit these traits are also likely to feel comfortable being taught via TBDE which provides an avenue for both independence (self-direction) and collaboration; and a relaxed, informal climate, with a wealth of information experiences. In addition, the identified population of learners for whom the program is intended realizes the spirit and potential of TBDE (Lewis & Farrell, 1995) and invests in its implementation.

TBDE Faculty Collaboration and the Art of Facilitation

Another significant finding of this study was that faculty of both the schools of nursing and schools of education were more concerned about the facilitative and collaborative approach to teaching in TBDE than faculty of the arts and sciences schools. According to Lewis (2000), the focus of technology based distance education is student learning with teachers functioning as facilitators and collaborators in the learning process as opposed to teacher’s traditional role as presenters of information. Based on this view, schools of higher institutions namely nursing and education that encourage the role of faculty as facilitators and collaborators are most likely to consider the adoption of TBDE than those that do not advocate the facilitative approach (Ryan, M., Carlton, K. H., & Ali, N. S., 2004). According to Green et al. (2010) TBDE immerses students, peers, and their faculty in a collaborative online environment that mirrors the complexity that nursing and education students are experiencing in their workplaces.

Vital to the success of faculty serving as facilitators is working with students who are receptive to facilitative instruction. According to Montgomery (1999) nursing distance learning has evidence of great success in past endeavors. The hallmark of the BSN (Bachelor of Science in Nursing) program is that it is designed to develop the professional knowledge and skills of working registered nurses without the need to reteach nursing content already acquired in prior academic programs (Zerwekh & Pepcello, 2000). This encourages faculty to act as facilitators, a trait in faculty that makes using TBDE easy.

Finally, the results of this study indicated that rank order of faculty likely to teach TBDE courses were nursing, medical sciences, followed by education, and technological sciences faculty. These results mirrored in part the NEA 2000 report on public 4-year institution schools' participation in TBDE, which stated that to a great extent the public 4-year institutions were likely to offer for-credit distance education courses in the health professions, education, engineering, agriculture and natural resources, and library and information sciences. In a study of 171 nursing faculty Christianson, et al (2002) stated:

> ….nurses felt that [TBDE] was an effective form of instruction that could be used to deliver any type of nursing course. Most respondents in the study indicated that they preferred online teaching to face-to-face instruction. The researchers concluded that this positive reaction to teaching online supports the future viability of web-based instruction at colleges of nursing. (p.213)

Implications

The implications of the study are that nurse educators and nursing students should be encouraged to participate in TBDE as they have the foundation for success. Institutions should consider using TBDE faculty from nursing schools as mentors or models for schools within the institution. New components of TBDE could be piloted in the school of nursing. The faculty of nursing could provide professional development in TBDE to faculty of the other schools. Faculty who teach adult learners, such as graduate level students should consider incorporating TBDE as an instructional tool. Professions with a potential workforce shortage should consider the use of TBDE as a proactive measure.

Conclusion

The nursing faculty in public 4-year institutions of higher education in the southern sector of the United States leads the other schools in its openness and projected participation in TBDE. The faculty of education, medical, and technological sciences are next in their involvement and interest in TBDE. Four characteristics predominant in the field of nursing may provide the underpinnings for the faculty of nursing success in TBDE instruction. They include the desire and need to curb the shortage of nurses (the need for nurses); the encouragement of the national nursing associations for the use of technology; adult-aged student nurses (androgogy); and the facilitative methods of instruction used by nurse educators. Consequently, the benefits gleaned by the Schools of Nursing in using Technology-Based Distance Education reduce or negate the prohibitive costs.

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