Assessing Faculty Attitudes towards Online Instruction: A Motivational Approach

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Abstract

There continues to be a lack of congruence in the attitudes of faculty and administrators with respect to online or distance education. The authors developed and administered a questionnaire to assess pertinent attitudes and perceptions of full and part-time faculty (n= 421) toward online instruction at their private university in a U.S. Middle Atlantic State. Responses to thirty-five items were subjected to exploratory factor analysis with four factors emerging labeled as technical resources, self-efficacy, strategic alignment, and contextual suitability. Differences were found based on a number of demographic variables including experience with online instruction, being part-time, working in a professional school, gender, and years teaching. Relationships among factors are also explored and practical implications discussed.

Introduction

Technological, economic, and demographic changes have provided both opportunities and challenges for college and university students, faculty, and administrators. The explosion of technologies is seen by many as enabling high quality education to be made available to a broader range of students in a more convenient and cost effective manner. Others are concerned that the technologies will be used to develop and market low quality substitutes for traditional education. Conversations about the appropriate roles of traditional and non-traditional forms of instruction are taking place on campuses around the world. The conversations are taking place in colleges and universities in which academic leaders believe the outcomes of online instruction are the same or superior to those of traditional face-to-face instruction and where the majority of faculty disagree with that assessment with these differences in perceptions remaining consistent over time (Allen, Seaman, Poulin, & Straut, 2016).

The emergence of non-traditional technologically facilitated forms of instruction has naturally lead to a proliferation of discussion and research as to its relative effectiveness as well as the attitudes of administrators, students, and faculty towards them (Johnson, et al., 2011; Lloyd, Byrne, & McCoy, 2012; Muilenburg & Berge, 2001; Seok, DaCosta, Kinsell, & Tung, 2010; Shachar & Neumann 2010; Stewart, Bachman, & Johnson, 2010; Tanner, Noser, & Totaro, 2006; Ulmer, Watson, & Derby, 2007; Wilkes, Simon, & Brooks, 2006).

Effective strategic leadership is frequently seen as a series of ongoing conversations through which employees are engaged (Groysberg & Slind, 2012). If administrators view online education as integral to an institution's strategy it is necessary to understand and address the motivational factors that would influence their faculty's willingness to support that effort. The current research is intended to contribute to further understanding of the factors that influence faculty attitudes in several ways:

1. Develop measures of attitudinal constructs that would have motivational effects;
2. Analyze differences in the attitudinal constructs related to individual demographic factors (age, experience teaching and gender) and organizational demographic factors (such as employment status and discipline) on attitudes;
3. Examine relationships among these attitudinal constructs.

Literature Review

There have been a number of studies that examined relationships between individual demographic factors and attitudes towards online instruction. For example, faculty have been found to have less favorable attitudes towards online instruction than students (Seok et al. 2010; Tanner et al., 2009; Wilkes, Simon, & Brooks, 2006). Additionally, faculty with greater experience teaching online and exposure to related technologies have more positive attitudes (Hall, 2013; Johnson et al., 2011; Lloyd, Byrne, & McCoy, 2012; Seok et al., 2010; Ulmer, Watson & Derby, 2007) as do female faculty (Lloyd et al., 2012; Seok et al., 2010). These studies reported responses to individual items rather than constructing scales. It is worth noting that even though Ulmer et al. (2007) concluded that those who had more experience with online instruction had overall views that were more favorable they, paradoxically, expressed greater agreement with one item: "I believe distance education causes the quality of education to go down."

Other researchers attempted to create measures of relevant constructs using exploratory factor analysis (EFA). Muilenburg and Berge (2001) and Lloyd et al. (2012) asked faculty to rate the severity of different barriers. They specified sixty four barriers and from responses identified ten factors: administrative structure; organizational change; technical expertise, support, and infrastructure; social interaction and program quality; faculty compensation and time; threat of technology; legal issues; evaluation/effectiveness; access; and student-support services. Lloyd et al. (2012) specified 22 possible barriers and from responses identified four factors: interpersonal barriers, institutional policy barriers, training and technology barriers, and cost/benefit analysis barriers. They reported women perceived fewer barriers on all four dimensions than did men. Those who had never taken or taught online courses perceived greater interpersonal barriers than those who had more experience with online instruction.

Bolliger and Wasilik (2009) developed an instrument to assess the satisfaction of faculty who had taught online courses and identified three primary factors; student, instructor, and institution. Stewart et al. (2010) analyzed responses to items that might motivate faculty to teach online and items that might motivate them to teach traditionally. They also measured participant experience with, and perceived ease of use and usefulness of certain educational technologies, and intention to teach online. They found that the ease of use of the educational technologies, facilitating conditions, and extrinsic advantages of online were positively related to intention to teach online whereas the intrinsic advantages of teaching traditionally were negatively related with perceived usefulness; the intrinsic advantages of online were however, unrelated to intentions to teach online. Faculty in their study viewed online instruction as having less value and legitimacy than traditional instruction with respect to prestige, impact on employment opportunities, and opportunities to attend graduate school.

Methods

This research was undertaken in a single university located in the U.S. in a Middle Atlantic state. The university is classified by the Carnegie Foundation as a medium sized (approximately 8,000 students) four-year and above primarily non-residential institution which is majority undergraduate. The undergraduate instructional program is balanced between Arts & Sciences and professional programs (Business, Education, Nursing, Psychology and Social Work) with an undergraduate profile that is full-time, selective and with a high transfer-in. The graduate instructional program is doctoral with a preponderance of professional programs. The majority of the students at the University are undergraduate (a ratio of 2.1 based on full-time equivalents). However, there are marked differences across units. The ratio in the Arts & Sciences was 29.2 whereas the ratio among the five professional schools was 0.76.

The authors asked all full- and part-time faculty (n = 322 and n = 639) to voluntarily and anonymously complete the surveys with paper-and-pencil and on-line alternatives provided. A total of 421 useable surveys were returned (for a response rate of 44%). As some participants did not provide all information, including demographic information, the response rates for subgroups such as full or part time faculty are presented as minimums: full-time, 67% part-time, 28%.

The mean age of the respondents was approximately 51.9 years (sd = 12.18) and the mean years of experience teaching at the college level was 14.36 (sd = 11.33). The majority of participants were full-time faculty (54.5%) with most of those holding the rank of Associate or Full Professor (63.4%) and Assistant Professors accounting for 28.7%. Other full-time faculty such as Clinical and Visiting Professors accounted for 7.9%. The majority of the participants were male (54.7%). The organizational demographic composition of the sample was representative of the population as a whole.

The majority of subjects (67%) reported they had not taught any online courses (synchronous, asynchronous, full on online, or blended). In subsequent analysis, participants were classified into three categories: with no experience (67%); those with limited experience (one to ten classes, 28%), and those with greater experience (11 to 130, 5%)

Measures

The authors asked participants to choose among Likert-type response options to thirty five items (Table 1). Participants were asked about their "attitude towards teaching through an online format (whether synchronous or asynchronous) those courses that you usually teach in a traditional classroom setting to the students that you usually teach" at the university. Items were intended to assess beliefs or attitudes that would be related to online instruction at the specific university, as opposed to higher education in general, and with reference to the students at that university, as opposed to college students in general.

The thirty-five items were intended to assess four distinct constructs: self-efficacy with respect to online instruction; strategic alignment, technical resources, and contextual suitability. While some prior research (e.g., Lloyd et al., 2012; Muilenburg & Berge, 2001) asked participants to evaluate barriers, the decision was made in this research to develop items which were primarily positive in tone. Asking faculty to evaluate aspects that were presented as negative might have been seen by faculty members, as well as administrators, as representing a deliberate attempt by the researchers to bias the responses by encouraging the expression of negative attitudes towards online instruction. The majority of items (28) were phrased in a manner that a person who endorsed them would most likely have a favorable attitude towards online instruction with endorsement of the other seven likely to be associated with a negative attitudes towards online instruction.

The support available to the faculty was assessed by eight items shown in Table 1. The university maintains a support unit which is described as "a vital part in the promotion of new technologies, pedagogies and professional development for faculty" and areas in which it specializes is "blended and online teaching, podcasting, media production, plagiarism prevention and detection, video conferencing, and the shift in pedagogy resulting with the use of technology in the classroom." For purposes of this research the unit will be identified as the Faculty Support Unit (FSU). Seven items made specific reference to the FSU. *Subjects were provided 5-point Likert-type response options (Strongly Disagree, Disagree, Neither Agree/Disagree, Agree, Strongly Agree and Unsure/No opinion* for six items and, for two items that asked about degree of helpfulness of the FSU*, Almost no help, Little help, Moderately helpful, Somewhat helpful, Extremely helpful* and *Unsure/No opinion*). For purpose of scoring each participant's responses, *not sure/no*

opinion responses were coded as representing the midpoint response and items were scored and averaged such that higher values expressed greater perceived technical support. The Cronbach alpha coefficient of internal reliability was .88.

Self-efficacy was assessed by six items shown in Table 1. Subjects were provided 5-point Likert-type response options (*Strongly Disagree*, *Disagree*, *Neither Agree/Disagree*, *Agree, Strongly Agree and Unsure/No*). Participants' scores were calculated as above. The Cronbach alpha was .81.
Strategic alignment was assessed by six items shown in Table 1. Participants' scores were calculated as above. The Cronbach alpha was .84. *Contextual suitability* was assessed by six items shown in Table 1. Participants' scores were calculated as above. The Cronbach alpha was .84. *Demographic variables* included gender, academic unit, the number of online courses that the subject had taught during their careers and academic rank (including full- or part-time status) and age and years of experience teaching at the college level (within ranges of years).

Results

The 35 items which assessed attitudes related to online instruction were subjected to an exploratory factor analysis with Varimax rotation in order to determine if it was possible to create measures of underlying constructs. The Kaiser (1960) rule by which all factors with Eigenvalues greater than 1 should be retained is commonly used and is the default for SPSS. However, it has been shown to produce spurious results and frequently overstates the number of factors (Hayton, Allen & Scarpello, 2004; Horn, 1965). Therefore a parallel analysis (PA) using the procedure developed by Hayton et al (2004) was conducted which produced a five factor solution. The loadings of each of the thirty five items are also shown in Table 1. EFA can produce factors that are artifacts of question phrasing rather than representing differences in the underlying constructs; for example, reverse coding items alone might produce a different factor loading. Only three reversed scored items loaded on the fifth column. Their content was examined and interpreted as relating substantively to contextual suitability. The Cronbach alphas of each of the four resulting scales (.88, .81. .84, and .84) were well above the Nunnally's (1978) benchmark of .70.

As shown in Table 2, age and years teaching were strongly correlated ($r = .55, p < .001$) and both were negatively related to the attitudes. The relationships seemed somewhat more pronounced between years teaching and support ($r = -.17, p < .01$), self-efficacy ($r = -.18, p < .001$), strategic alignment ($r = -.19, p < .001$) and contextual suitability ($r = -.26, p < .001$). As shown in Table 2, the results were similar when the authors entered years in teaching with other demographic variables support ($\beta = -.13, p < .05$), self-efficacy ($\beta = -.13, p < .05$), strategic alignment ($\beta = -.15, p < .01$) and contextual suitability ($\beta = -.20, p < .001$).

The authors also found significant differences between full-time and part-time faculty with the part-time faculty reporting more favorable attitudes (support, $r = .13, p < .01$; strategic alignment, $r = .17, p < .01$; self-efficacy, $r = .18, p < .001$; contextual suitability, $r = .24, p < .001$) although when entered into a regression with other demographic variables the β's remained statistically significant only for self-efficacy ($\beta = .16, p < .01$) and contextual suitability ($\beta = .17, p < .01$).

There were differences between men and women. Women perceived lower levels of technical resources ($r = -.13, p < .01$ and $\beta = -.13, p < .05$) and strategic alignment ($r = -.07, p = .19$ but $\beta = -.08, p < .05$).

The authors found differences between faculty in the Arts & Sciences and those in professional schools. Professional school faculty reported less uncertainty ($r = .11, p < .05$) and higher levels of technical resources ($r = .12, p < .05$ and $\beta = .12, p < .05$) and contextual suitability ($r = .17, p < .001$ and $\beta = .19, p < .001$). Post hoc analysis, however, showed that faculty in the schools of nursing and education primarily accounted for these differences.

There were differences in attitudes based on a faculty member's prior experience teaching online courses with the number of courses taught being positively related to technical resources ($r = .15, p < .01$), strategic alignment ($r = .12, p < .01$), self-efficacy ($r = .30, p < .001$) and contextual suitability ($r = .21, p < .001$). However, as the distribution of the number of courses taught was far from normal, two dummy variables were created for limited online experience (eg., having taught from one to ten courses online) and substantial online experience (e.g, having taught more than ten online courses) and those were entered in the hierarchical regressions with other demographic control variables. The analysis remained significant only with respect to self-efficacy (limited online teaching, $\beta = .24, p < .001$ and substantial online teaching $\beta = .31, p < .001$) and contextual suitability (limited online teaching, $\beta = .10, p < .05$ and substantial online teaching $\beta = .19, p < .001$).

Finally, the authors conducted a hierarchical regression with contextual suitability as the dependent variable. Each of the demographic variables was entered as the first step with the technical resources, strategic alignment, and self-efficacy entered in the second step. As shown in Table 3, the inclusion of the three attitudinal variables increased the *R2* from .16 to .59 and the *betas* for all three were significant (technical resources, $\beta = .12, p < .01$; self-efficacy, $\beta = .57, p < .001$; strategic alignment, $\beta = .17, p < .001$). The betas for tenure ($\beta = -.09, p < .05$) and discipline ($\beta = .08, p < .05$) remained significant but none of the other demographic variables did. With the addition of those variables in the second step, status and the dummy variables for prior online experience ceased to be statistically significant.

Discussion

In the evaluation of technical support, the authors found significant differences among faculty based on demographics. Faculty who were full-time and had taught for more years perceived lower levels of technical support, strategic alignment, self-efficacy, and contextual suitability than did adjunct and less experienced faculty.

The faculty's perceptions of the adequacy of the technical resources provided to them to develop and deliver a quality course should have two effects on their motivation. Expectancy theory would suggest that the greater they evaluated the support, the more likely they would view their efforts as leading to successful courses (expectancy) and the more likely to expend effort (Beehr, Glazer,

Fischer, Linton, & Hansen, 2009; Biggs, Brough, & Barbour, 2014; Boswell & Boudreau, 2001; Boswell, 2006; Boswell, Bingham, & Colvin, 2006; Schneider, et al., 2003; Vroom, 1964). Based on strategic alignment, the provision of these resources would be evaluated by the faculty as a concrete communication by the organization that it desires and values the creation of such courses (Biggs et al., 2014; Boswell, 2006; Schneider et al., 2003). Self-efficacy theory (Bandura, 1997) posits that an individual's sense of self-efficacy would be related to their expending effort. Self-efficacy was originally conceptualized as a generalized assessment of the self. However, the concept has been expanded to include finer grained self-assessments with respect to specific domains of tasks, including teaching (Klassen, & Chui, 2010; Klassen, & Tze, 2014).

Online experience seemed unrelated to perceptions of the university's technical resources and strategic alignment. In contrast, the finding that teaching online courses was generally positively related to attitudes regarding the suitability of online instruction and self-efficacy was logical and consistent with prior research (Hall, 2013; Johnson et al., 2011; Lloyd, Byrne, & McCoy, 2012; Seok et al., 2010; Ulmer, Watson and Derby, 2007). One explanation is that all faculty perceive similar structural characteristics, but that those who see that online instruction is suitable for the objectives of the students and the institution decided to expend the time and energy to acquire the necessary skills and abilities which had a positive effect on their sense of self-efficacy. The cross sectional design does not allow the authors to establish causality although, in most cases, it is unlikely that faculty would be mandated to teach online with that mandate leading them to acquire the needed skills and abilities and through those experiences coming to believe that online instruction was more contextually suitable.

The results of the hierarchical regression indicated that faculty perceptions of (i) online instruction as being integrated with the university's overall strategy, (ii) level of technical support afforded to them, and (iii) their own abilities with respect to online instruction were each positively related to their perceptions of the contextual suitability of online instruction in their university. Once those attitudinal variables were included in the model, the prior experience teaching online courses ceased to be statistically significant and the explanatory power of demographic variables such as years teaching and discipline became less.

In a study of 111 faculty who had taught at least one online course, Ray (2009) reported that 51% said that converting a course from face-to-face to totally online was hard or very hard. In our study 67% of our sample agreed or strongly agreed that "It would be a tremendous amount of work on my part to convert an existing course that I teach traditionally into an online alternative of equal quality."

The authors had expected there to be differences in attitudes between faculty in the Arts & Sciences and faculty in the professional schools because the professional schools have a greater proportion of graduate than undergraduate students with graduate students perhaps being viewed as more mature and disciplined and more likely to succeed in an online environment. The authors also thought that faculty might view the subject matter of the professional schools as being more conducive to online instruction. Post hoc analysis found that professional school faculty from Education and Nursing exhibited markedly more favorable attitudes.

Study Limitations

There are of course limitations to the study. First, the within-organization design raises questions about the ability to generalize the findings to other institutions although the authors believe the advantage of being able to make the within-organization comparisons was valuable.

Conclusion

The current research depicts a university at which faculty are unlikely to embrace online instruction. Consistent with prior research, they appear skeptical that it would "work" from the perspective of student learning, faculty enjoyment of teaching and faculty workload, or institutional objectives with respect to enrollment. It suggests the gap that Allen et al. (2016) reported between the views of administrators and faculty as to whether online instruction "works" for students is extant at this institution. The study suggests that, to the extent administrators want faculty to work enthusiastically towards increasing online activity it may need to better explain the role of online instruction in the overall strategy of the university, provide evidence that such instruction would work from the perspectives of the different stakeholders (students, faculty, and administration), and provide the technical and other pedagogical supports to make faculty feel more confident in their abilities to efficiently and effectively change from a traditional to a more technologically enhanced modality.

Table 1

Item Listing, Basic Statistics and Results of Exploratory Factor Analysis

#	Items	n	m	sd	Factor Loadings 1	2	3	4	5
1[TS]	The [FSU] provides the assistance I need to use Moodle as a class management system for traditional classes (such as posting of syllabi, assignments. collecting written assignments, maintaining grade book and communicating assignment grades).	423	4.18	1.00	.13	**.76**	.01	.03	-.09
2[TS]	If I bring a pedagogical need or desire to the [FSU], they are able to identify technological solutions to satisfy them.	419	3.96	.96	.10	**.84**	-.03	.06	-.06
3[TS]	Some classes that rely primarily on seat time also incorporate activities outside the classroom to satisfy … State requirements with respect to instructional time. [FSU] provides guidance as to the types of activities which would be suitable for my classes and would satisfy the University's criteria to qualify as an instructional activity.	413	3.34	.91	.08	**.63**	.22	-.08	.12
4[TS]	The [FSU] locates and assesses existing educational materials (including multimedia instructional material such as images, audio, and video files) and integrates them into my course management system.	414	3.24	1.02	.07	**.63**	.17	.08	.19
5[TS]	Overall, how helpful do you believe the [FSU] is in helping you to integrate technology into your traditional classes?	412	3.92	1.06	.11	**.79**	.11	.16	.01
10[TS]	[The university] could provide sufficient support for me to deliver a high quality online course if I wished to.	411	3.30	1.20	.41	**.51**	.26	.15	.01
26[TS]	The level of advice, guidance, recommendations and consulting that [FSU] provides would be sufficient for me to convert an existing course that I teach traditionally into an online alternative of equal quality.	412	3.09	1.21	.30	**.57**	.23	.47	.02
28[TS]	Overall, how helpful do you believe that [FSU] could be in helping you to develop and deliver an online version of class that would be equal in quality to the traditional format?	413	3.71	1.14	.27	**.69**	.10	.25	.01
29[SA]	I have a clear idea of the goals and objectives of [the university's] senior administrators with respect to the role of online instruction.	410	2.65	1.19	.10	.08	**.82**	.14	.00
30[SA]	I have a clear idea of the goals and objectives of my unit administration with respect to the role of online instruction.	409	2.72	1.15	.03	.11	**.83**	.09	-.02
31[SA]	[The university's] senior administrators have articulated how online	409	2.64	1.12	.15	.11	**.81**	.03	-.02

	instruction fits with its long term strategy.								
32[SA]	[The university's] senior administrators provide the resources necessary for faculty to provide high quality education through both traditional and online instruction.	407	2.89	1.12	.20	.33	**.59**	.01	.10
34[SA]	[The University] has sufficient resources to develop a substantial proportion of online courses.	409	2.91	1.16	.33	.22	**.40**	.18	.12
35[SA]	I understand the relative roles of [the university] faculty and third parties such as … in developing and delivering online instruction.	404	2.53	1.14	.20	.03	**.69**	.08	.03
8[SE]	I prefer the face-to-face interaction of traditional instruction to the interaction of an online course. (R)	415	4.19	1.07	.40	.16	-.05	**.49**	.24
11[SE]	I believe that the subject matter of the courses I teach lend themselves very much to online delivery.	416	2.38	1.34	.53	.00	.05	**.53**	.15
17[SE]	My skills as a teacher would easily transfer from a traditional classroom setting to an online course.	413	2.74	1.27	.43	.18	.09	**.67**	.00
24[SE]	It would be a tremendous amount of work on my part to convert an existing course that I teach traditionally into an online alternative of equal quality. (R)	412	3.86	1.17	.15	.19	.03	**.41**	.42
25[SE]	I have the knowledge and ability that it would take to convert an existing course that I teach traditionally into an online alternative of equal quality.	412	3.07	1.35	.29	.07	.16	**.70**	-.16
27[SE]	I have a good understanding of how the online version of my course would be used once I developed it.	410	2.90	1.23	.21	.15	.41	**.70**	.01
6[SS]	Most students can learn material as well through online instruction as they can through traditional instruction.	413	2.46	1.21	**.69**	.24	.11	.33	.12
7[SS]	Most students can learn material better through online instruction as they can through traditional instruction.	413	2.08	1.04	**.70**	.14	.12	.29	.12
9[SS]	I find the scheduling flexibility of online classes very appealing to me.	411	3.39	1.18	**.63**	.23	.02	.24	-.14
12[SS]	Some types of courses can be taught very effectively online; other types of courses cannot.	412	4.08	.99	**.48**	.12	.09	-.23	-.40
13[SS]	I believe our students have the necessary skills and motivations to succeed in an online course.	413	2.84	1.17	**.64**	.16	.20	.11	.23
14[SS]	Our students would prefer to take a majority of their courses online if they were available.	412	2.71	1.00	**.49**	.10	.11	.09	-.06
15[SS]	Offering more online instruction will bring substantially more students to [the university].	415	3.12	1.08	**.67**	.11	.15	.17	-.08
16[SS]	Many students who do not participate in a traditional classroom environment find it easier to do so in an online course.	414	3.17	.98	**.58**	.22	.10	.04	-.21
18[SS]	Increasing the proportion of online courses will lead to a reduction in the number of full-time faculty. (R)	412	3.34	1.16	**.45**	-.04	.04	.05	.17
19[SS]	Students can have as much interaction with me in online courses as they could in a traditional class.	413	2.43	1.33	**.58**	.18	.06	.39	.15
20[SS]	Students in online classes expect their instructors to be available and respond immediately 24/7. (R)	412	3.59	1.08	.34	.08	.04	-.25	**.53**
21[SS]	Students at [the university] are just as likely to succeed in courses taught online as they are in traditional classes.	407	2.63	1.19	**.72**	.14	.16	.18	.18
22[SS]	It is more difficult to ensure academic honesty in online courses than in traditional courses. (R)	345	3.66	1.22	.15	.06	-.02	.16	**.57**
23[SS]	Students have to be more self-disciplined to succeed in an online class then a traditional class. (R)	412	3.92	1.13	-.15	-.03	.09	-.08	**.74**
33[SS]	I believe that [the university] must offer a substantial portion of its course offerings in an online format.	387	2.28	1.17	**.59**	.10	.32	.24	.05

Note. # indicates their order on the survey instrument. [ ] and … indicate changes or elisions made to mask the identity of the institution at which data was collected. [TS] = Technical support items. [SI] = Strategic alignment items. [SE] = Self-efficacy items. [SS] = Contextual suitability items. (R) indicates the six items were phrased in a manner which would likely be endorsed by someone with a negative attitude toward online instruction and were accordingly reverse scored when incorporated into scales. Subjects were given six response options (1= *Strongly Disagree*, 2 = *Disagree*, 3 = *Neither Agree/Disagree*, 4 = *Agree,* 5 = *Strongly Agree*, 6 = *Unsure/No opinion* for items (except for # 5 and #28 where the responses options were 1 = *Almost no help,* 2 = *Little help,* 3 = *Moderately helpful,* 4 = *Somewhat helpful,* 5 = *Extremely helpful,* 6 = *Unsure/No opinion*). For the EFA, responses of Unsure/no opinion were recoded as the "3" midpoints. Factor loadings are the result of EFA with a Varimax rotation with a five factor solution imposed. The five factor solution was imposed after performing parallel analysis (Hayton et al., 2004). Valid n = 278. Eigenvalues and percent of variance for each factor: Factor 1, 10.52, 30.04%; 2; Factor 2, 2.83, 8.01%; Factor 3, 2.50, 7.18%; Factor 4, 1.84, 5.25%; Factor 5, 1.50, 4.28%.

Table 2

Basic Statistics and Correlations

	M	SD	N	1	2	3	4	5	6	7	8	9	10	11
1. Gender	1.45	.50	382	-										
2. Age	51.88	12.18	380	-.01	-									
3. Teaching	14.36	11.33	394	.02	.55	-								
4. Status	1.46	.50	398	-.03	-.04	-.36	-							
5. Disciplines	1.66	.48	400	-.05	.14	-.10	.08	-						
6. # Online	2.53	10.34	420	.02	.02	.07	.01	.02	-					
7. # Not sure	4.54	4.92	384	.02	.11	.02	.10	-.11	-.10	-				
8. Support	3.60	.77	424	-.14	-.05	-.17	.13	.12	.15	-.14	(.88)			
9. Strategy	2.73	.86	411	-.07	-.15	-.18	.17	.05	.12	-.05	.43	(.84)		
10. Self-efficacy	2.50	.89	416	-.02	-.15	-.19	.18	.08	.30	-.20	.45	.43	(.81)	
11. Suitability	2.72	.64	417	-.01	-.11	-.26	.24	.17	.21	-.13	.47	.48	.71	(.84)

Note. Categorical variables: Gender (1 = male, 2 = female); Status (1 = Full-Time, 2 = Part-Time); Disciplines (1 = Arts & Sciences, 2 = Professional Schools). Teaching = number of years teaching at college level. Cronbach alpha coefficients appear along diagonals. Correlations ≥ .18 significant at $p < .01$, two-tailed; ≥ .13 significant at $p < .01$, two-tailed; ≥ .11 significant at $p < .01$, two-tailed.

Table 3

Results of Single and Two-Step Hierarchical Regressions

	Dependent Variables				
	Single Step Regressions			Two Step Hierarchical Regression	
Independent Variables	Technical Resources	Strategic Alignment	Self-efficacy	Contextual Suitability	
	β	*β*	*β*	*β*	*β*
Gender	-.13*	-.08*	-.02	-.02	.04
Years teaching	-.13*	-.15**	-.13*	-.20***	-.09*
Status	.07	.10	.16**	.17**	.06
Discipline	.12*	.03	.07	.13**	.07*
Limited online	.02	.05	.24***	.10*	-.05
Substantial online	.10.058	.09	.31***	.19***	-.01
Support					.12**
Self-efficacy					.57***
Strategy					.17***
R^2	.08	.06	.19	.16	.59
f^2	.09	.06	.24	.19	1.43
Total F	5.03***	3.98**	14.54***	11.39***	57.46***
ΔR^2	-	-	-	-	.43
Δf^2	-	-	-	-	.76
ΔF	-	-	-	-	126.18***
DF'S	6, 366	6, 366	6, 365	6, 365	9, 362

Note. Categorical variables: Gender (1 = male, 2 = female); Status (1 = Full-Time, 2 = Part-Time); Discipline (1 = Arts & Sciences, 2 = Professional Schools). Limited online (1 = Taught one to ten online classes, 0 = Other); Substantial online (1 = Taught more ten online classes, 0 = Other). The result of the non-hierarchical regression on suitability was virtually identical to the results of the first step of the hierarchical regression and was omitted to save space. All three other attitudinal variables were entered together in the second step of the hierarchical regression. Hierarchical regressions on suitability with each attitude being entered alone were also conducted with following results: support, $\beta = .43$***, $\Delta R^2 = .17$, $\Delta f^2 = .20$; strategy, $\beta = .42$***, $\Delta R^2 = .16$, $\Delta f^2 = .20$; self-efficacy, $\beta = .69$***, $\Delta R^2 = .39$, $\Delta f^2 = .59$;

$p < .05$, two-tailed; **$p < .01$, two-tailed; ***$p < .01$, two-tailed.

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