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Attitudes Affecting Online Learning Implementation in Higher Education Institutions

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Abstract

This study explores attitudes towards and affecting online learning implementation. In recent years there has been greater acceptance of online learning by institutional decision-makers, as evidenced by higher levels of institutional involvement; nevertheless, the increase in faculty acceptance lags behind. This gap affects the widespread adoption of online learning. This paper proposes that faculty acceptance of online learning is influenced by attitudes related to four variables that affect practice change: intellectual reluctance, support, change and cost-benefit. Inherently, these attitudes translate into behaviours that influence the level of resistance toward online learning.

Résumé

Cette étude explore les attitudes envers, et affectant, l'instauration de l'apprentissage en ligne. Ces dernières années, il y a eu une plus grande acceptation de l'apprentissage en ligne par les décideurs, comme on peut le voir par l'augmentation de l'implication institutionnelle; cependant, les professeures et professeurs ne suivent pas. Cet écart affecte l'adoption à grande échelle de l'apprentissage à distance. Cet article propose que l'acceptation par les professeures et professeurs de l'apprentissage à distance est influencée par les attitudes liées à quatre variables qui affectent le changement de pratique : méfiance intellectuelle, soutien, changement et coût-bénéfice. Ces attitudes se traduisent par des comportements qui influencent le niveau de résistance à l'apprentissage en ligne.

Introduction

This study explores attitudes towards and affecting online learning implementation (OLI). In recent years there has been greater acceptance of online learning (OL) by institutional decision-makers, as evidenced by higher levels of institutional involvement; nevertheless, the increase in faculty acceptance lags behind (Allen & Seaman, 2006). This gap affects the widespread adoption of OL. This paper proposes that faculty acceptance of OL is influenced by attitudes related to four variables that affect practice change: intellectual reluctance, support, change and cost-

benefit. Inherently, these attitudes translate into behaviours that influence the level of resistance toward OLI.

OL requires institutions to shift their views of the teaching and learning process to respond to the needs of learners who are not studying in a traditional classroom (Chang, 1989; Bates, 2001). These changes may include new types of materials, instructional techniques, methods of communication, and organizational and administrative arrangements (Moore & Kearsley, 1996). New approaches required of faculty and academic administrators and changes in common instructional practice has an effect on attitudes and related behaviours, because among others, of interests, values, beliefs, or practices. A large body of literature highlights the issues faced by institutions making these types of adjustments and reasons why OLI can be regarded as a contentious policy area (Muilenburg & Berge, 2001; Dooley & Murphrey, 2000; Rockwell et all, 1999; Berge, 1998; Gellman-Danley & Fetzner, 1998).

Among others, one key variable leading to implementation problems that is acknowledged in the literature is the resistance of actors in organizational systems to take up new initiatives and change the status quo. Yet, although the role of attitudes has been discussed in policy implementation literature, and despite issues relating to OLI, the distance education (DE) literature shows that few field studies on attitudes that could lead to resistance have been undertaken beyond theoretical assumptions, or empirical descriptions (Anderson, 2004).

In this study we took up Matland's (1995) view that resistance to implement a policy may stem from an incongruity between an organization's objectives (in this case OL policy) and the implementers' interests, values and beliefs. This connection is extensively discussed in the literature (e.g., Pressman & Wildavsky, 1973; Ingram, 1977).

This study focuses on five of the six university-colleges in British Columbia, Canada (the 5th being a pilot). University-colleges were selected because they are currently involved in OLI. Each has recently included OL in their institutional planning and is allocating resources to support its use. University-colleges were also chosen because of their comprehensive mandate that includes academic and career programs, regional reach, and increasing resource base.

To determine attitudes towards OLI in these institutions, we identified four barriers that recur in the DE literature and can be a source for impairing implementation (see Literature section). They are: intellectual reluctance, support, change and cost-benefit. Identifying attitudes, and thus degrees of acceptance or reluctance, can help to explain levels of implementation, and point to ways of addressing those attitudes in implementation decision-making. In order to confirm the applicability of these four barriers, and the direction and degree of their importance in

affecting attitudes to OLI we used a research design based on a triangulation of three tools: an attitude questionnaire, interviews to explain and elaborate on the questionnaire findings, and a content analysis of provincial and institutional documents to understand the context in which OL takes place. The factor analysis undertaken, confirmed the validity of the four factors as perceived barriers to OLI and as such, as a valid proposition in this study.[i] These barriers were used as variables to identify the existence of a mid-level of resistance to implement OL across university-colleges (see Research Methodology and Findings Section). According to implementation literature in general, and given the novelty of OL and changes to deep-rooted teaching approaches, these findings provide a positive forecast regarding the greater acceptance and use of OL in post-secondary institutions.

In this study, OL is regarded as a teaching/learning experience where the majority of the student's course experience takes place via computer and Internet connection. Basically, OL is a form of DE that, unlike normative instruction, implies a separation of learner and instructor, with a type of media connecting the two (Holmberg, 1977; Wedemeyer, 1981; Keegan, 1983). Therefore, the existing body of applicable DE literature can obviously be utilized to inform OLI.

DE has been historically employed by institutions such as the Open University, UK and Athabasca University, Canada or operated, as a peripheral activity in campus-based operations. However, as information and communication technology have become more pervasive OL is increasingly viewed by decision-makers in government and institutions as an important way for mainstream universities and colleges to attract and serve an increasingly diverse student population (HEFCE, 2005; UNESCO, 2002; Collis & van der Wende, 2002; Bates, 2001). Government policy reflects the movement to lifelong learning in key policy directions and related programs to further integrate OL into institutions to enhance student accessibility and choice (British Columbia Ministry of Advanced Education, 2004; Alberta Learning, 2004).

Literature Review

The extensive policy implementation and related contingency theory literature has been used in this study to support studying attitudes as a key influence in policy implementation. This literature mainly asserts that problems arise because of a lack of fit between a policy and its context, namely, the organization and the actors within it (Bardach, 2000; O'Toole, 2000; Drazin & Van de Ven, 1985; Pfeffer, 1982). The closer the fit the lower the level of resistance; hence the greater the chances of acceptance and implementation.

Post-secondary OL policy takes place in a complex political environment with competing academic, social and economic interests, internally and externally. These relationships are affected by values, beliefs, and practices. Therefore examining the attitudes can help decision-makers to understand how faculty resistance to engage in OLI can be addressed.

According to DE literature intellectual reluctance, support, change and cost-benefit are barriers to implementation. Wolcott (2003) attributes faculty's resistance to implement OL to negative attitudes and environmental barriers to adoption, reflected by intellectual reluctance and issues of support. The barrier of intellectual reluctance is considered rooted in questions regarding the value and legitimacy of OL. Some authors attribute this reluctance to a lack of compatibility between OL and faculty beliefs, values, and norms associated with the goals of higher education (Meyer, 2002; Berge, 1998; Galusha, 1997). Rockwell (1999) found that the primary incentive for faculty to adopt DE technology was the intrinsic or the personal reward of learning new teaching techniques and improving their practice. However, faculty may be discouraged by environmental barriers such as a lack of support for their online teaching efforts. Unwillingness arises when faculty perceive little support from their department or colleagues, and a lack of assistance in the form of inadequate resources, technical help, and training (Dooley & Murphrey, 2000; Gilcher & Johnstone, 1989). Some instructors fear that the increase in OL will substantially change their role and threatens their competence and authority (Muilenburge & Berge, 2001).

Beaudoin (2002), Berge (1998), and Galusha (1997) identify change and cost as main barriers to implementation. Change and cost are influenced by the degree of organizational instability that may result from change (i.e., introduction of OL), and level of resources required vs. those available. Faculty and administrator unwillingness to implement arises when there is incongruence between DE goals and the institutional mandate and goals (Lape & Hart, 1997). As the degree to which the institution must change its structure, practices, and administrative systems to accommodate forms of DE increases, so does the problem of adoption and implementation (Moore & Kearsley, 1996; Moore, 1994). Administrators are faced with the need to provide increased access to students through DE integration in a comprehensive and cost-beneficial manner. For institutions to commit to DE implementation there must be a perceived need for the change, and a belief in the cost-benefit of the change (Havice, 1999; Chang, 1998).

Research Methodology and Findings

Our hypothesis is that faculty concerns about implementing OL are affected by attitudes related to four barriers, identified as important in the distance education literature, and used as variables in this study: intellectual reluctance, support, change, and cost-benefit. Our research questions test this hypothesis by asking:

1. Which of these four variables are perceived as more or less influential in OLI?
2. What is the degree of acceptance or resistance toward OL as indicated by respondents' attitudes toward the four variables?

The intent is to identify how, and to what extent existing values, beliefs and interests on the part of faculty and administrators can affect the implementation of OL. By knowing the attitudes of these key groups to OL, decision-makers can mitigate barriers thereby facilitating implementation. We sought to investigate whose interests are not being met; what goals and means are incongruous; what are the primary areas of incompatibility; and what is the degree of importance of concerns (Matland, 1995). This is in line with the contention, offered in literature, that reluctance is triggered when there is a gap between the interests of institutions and faculty or academic administrators in the implementation of OL. These considerations were at the basis of the operational questions used in the various study tools.

To determine the attitudes towards OLI as perceived by faculty and administrators in institutions of higher education, we used three instruments: an attitude and attributes questionnaire, interviews, and content analysis of provincial and institutional policy documents. These qualitative and quantitative tools allowed for a comprehensive data-base for analysis, and for testing the validity and reliability of the findings.

In all, five institutions took part in the study (inclusive of a pilot), and involved 382 respondents (321 valid questionnaires) of which 346 were faculty and 36 were academic administrators. Invalid questionnaires were identified using the listwise method, to ensure validity. About 10% of respondents (N = 39), randomly selected, participated in the interviews. The tools were meant to capture degrees and directions of attitudes towards the four variables identified in DE literature: intellectual reluctance, support, change, and cost-benefit. Operational questions used in the questionnaire were clustered according to each of the four variables (see Figures 2, 3, 4, 5) and expanded on in the interviews and content analysis to validate and explain the findings obtained. The questionnaire, delivered online to faculty and administrators, was divided into two sections.

Section One, questions 1-32 (see Figures 2-5) sought to identify respondents' attitudes using a Likert scale meant to elicit attitudinal responses/perceptions. The questions in this section were divided into four clusters of eight questions, with each cluster relating to one of the four identified variables:

- *Intellectual reluctance:* perceptions about the degree to which OL is consistent with their professional values and norms;
- *Support:* perceptions that their efforts are valued by the institution and that there is general and specific support;
- *Change:* perceptions of degree of instability caused by changes in their institution, and to their job; and
- *Cost-benefit:* perceptions of OL as benefits outweighing costs.

The criteria used to measure attitudes towards OLI according to each cluster was low (1-2), medium (2-3), and high (3-4), on the Likert scale using 1 for strongly agree, 2 for agree, 3 for disagree and 4 for strongly disagree.

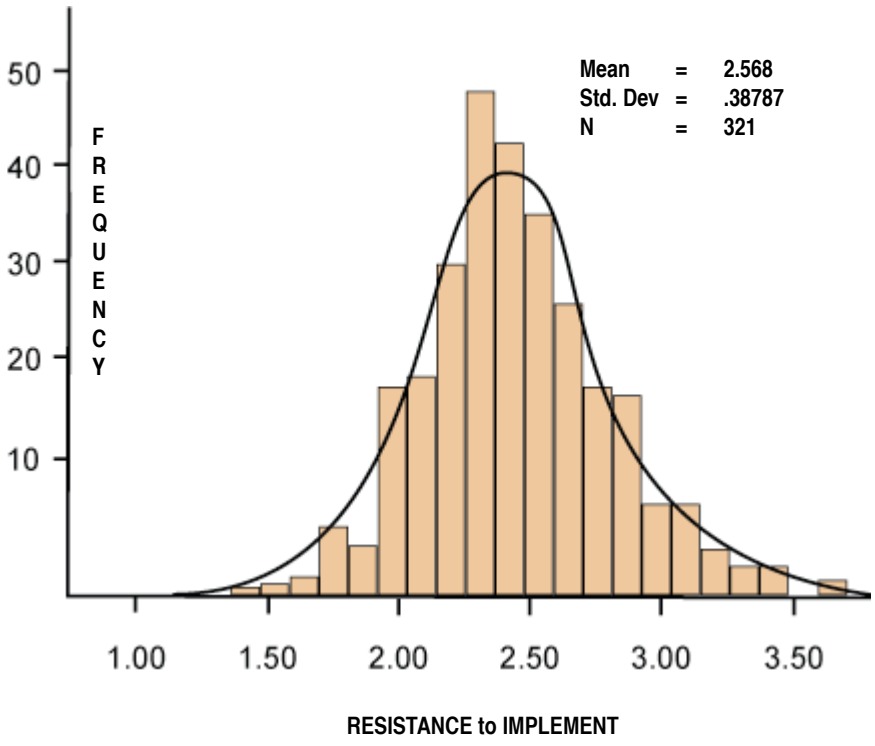
Section Two (items 33-36) was designed to collect common demographic data prevalent in implementation studies concerning: *position, subject area, years of experience in their discipline,* and *level of experience with OL.* This provided both a factual description of the study's respondents and helped explain attitudes and interpretation of findings. Data allowed for findings regarding differences of perception among the respondents, especially between faculty and administrators.

Reliability of design, content validity, and criterion validity were addressed in various ways. To begin, a pilot study was conducted in a fifth institution using 57 respondents. Based on the pilot the neutral category was eliminated and the questionnaire changed from a five-point to a four-point Likert Scale to more firmly underpin the direction and intensity of attitudes. The study's validity and reliability were further addressed by using both qualitative and quantitative data and through a triangulation of questions and criteria across the three tools (questionnaire, interviews, and content analysis). The factor analysis validated the questions in each cluster and identified the four barriers as being important implementation considerations (see endnote ii). Multiple regression analysis also showed that there is little difference in attitudes between institutions (see endnote iv). This allowed us to combine the data from the four institutions and use one data set on which to base the findings. Additionally, reliability was addressed through a half-split questionnaire design, with a coefficient of 0.85, and a Cronbach alpha at 0.89. Both were significant at 0.01 showing a low level of variability in the responses, and minimal level of error.

Findings: Attitudes

Data from Section One of the questionnaire was used to investigate attitudes toward OLI within each institution according to types of variables and intensity. This data was received from 321 valid questionnaires. Institution "A" returned 107 responses (89 valid responses), institution "B" 126 responses (107 valid responses), institution "C" 92 responses (73 valid responses), and institution "D" 61 responses (52 valid responses). The data obtained pointed to a collective mean of 2.56 for the four institutions. The histogram (see Figure 1) shows, that according to the Likert Scale, the majority of responses are at the mid-point of the scale (in the 2-3 range) indicating a mid-level of concern regarding OLI. The concentration of responses at mid point, combined with a symmetrical curve and few outliers indicates that data is normally distributed. There is a slight peak at mid point of the scale, with the

Figure 1. Histogram: Degree of Resistance to OLI



standard deviation (SD) of 0.38 indicating a strong consensus in the responses obtained across institutions. However, the peak obtained is within the normal range and the data is not kurtotic or skewed, indicating little bias that may affect data validity.[ii]

When a multiple regression analysis was conducted it showed no significant differences in the attitude level between three institutions and only a slight difference for one institution.[iii] The, findings obtained allow us to safely generalize that the university-colleges involved in the study have a mid-level of resistance related to OLI.[iv]

Once we identified the overall attitude to OLI we sought to determine the extent that particular attitudes related to each of the four variables, and the attributes of respondents, as identified by demographic data, influenced the overall degree of resistance or acceptance of OLI. The impact of attitudes were analyzed using the following clusters of questionnaire items (Figures 2-5) that include all questions in section one of the questionnaire:

Intellectual reluctance, measured using criteria in questions 1, 2, 3, 4, 17, 18, 19, 20 shows that the attitudes towards OLI are at mid-level with an overall mean of 2.41, and an overall SD of 0.65 (see Figure 2).

Figure 2. Intellectual Reluctance

Intellectual Reluctance Mean: 2.4146 (N = 363) Standard Deviation: 0.65140 *Note: Items 17 and 19 are reverse coded.*	Question Mean	Question Standard Deviation
1 Teaching online can be as effective as teaching in the classroom	2.81	0.924
17 OL can never be as effective as traditional instruction	2.58	0.910
2 OL can help my institution to provide higher quality programs	2.43	0.899
18 My institution can use OL to improve its service to students	2.02	0.747
3 Generally, students who take an on-line course perform just as well as students who take that course on campus	2.60	0.807
19 Students don't learn as much from online courses as they do in the classroom.	2.66	0.895
4 OL can help my institution to meet its strategic goals.	1.99	0.747
20 OL contributes positively to the overall performance of my institution	2.26	0.762

Question responses in Figure 2 were then analyzed to identify specific directions and degrees of attitudes related to the barrier of intellectual

reluctance towards OLI. Answers to questions 19 and 3 show a perception that OL students do not learn as much and do not perform as well as on-campus students. This implies a higher mid-level degree of concern at a mean of over 2.6 as opposed to a low degree of concern regarding question 4 (mean 1.99) that OL can help the institution meet strategic goals. Respondents feel that OL is not as effective as classroom instruction (questions 1, 17, 3, 19) with question 1 showing a high mid-level degree of concern. Respondents do not see OL as a particularly effective instructional tool (1, 17) with the degree of concern in the high mid-level range, above the mean of 2.5. Note that while respondents perceive that OL is not as effective as traditional instruction there is recognition that it can help institutions meet their goals and improve their service to students (4, 18) with a mean of 2.02 and 1.99 respectively.

Support, measured in questions 5, 6, 7, 8, 21, 22, 23, 24 shows concern at a higher mid-level with an overall mean of 2.61 (see Figure 3). This points to a slightly higher degree of reluctance resulting from perceptions of support versus intellectual reluctance, in the previous cluster. The SD of 0.46 indicates consensus among respondents' attitudes regarding the influence that level of support has on OLI.

Figure 3. Support

Support Mean: 2.6117 (N = 359) Standard Deviation: 0.46235 *Note: Items 8, 21, and 24 are reverse coded.*	Question Mean	Question Standard Deviation
5 My department is supportive of faculty who use OL.	2.22	0.829
21 My department doesn't see OL as a priority.	2.69	0.824
6 My department provides the assistance I need to use OL effectively.	2.59	0.852
22 My institution provides adequate technical support for faculty who use OL.	2.55	0.836
7 Efforts to use OL are appreciated at my institution.	2.20	0.754
23 Faculty benefits professionally from engaging in online teaching.	2.31	0.818
8 Using OL is very time consuming for faculty.	3.10	0.870
24 OL requires extra effort from faculty.	3.23	0.711

The following provide examples of how the answers to the questions in the above cluster reflect degrees and directions of attitudes related to the issue of support. Answers to questions 7 and 5 (mean @ 2.2) present a

low mid-level concern with the degree to which institutions appreciate the efforts of respondents, both faculty and administrators, that use OL. The means of answers 8 and 24, respectively range between 3.10 and 3.23 and point to a high level of concern regarding how OL negatively impacts the time of faculty and administrators. In these two questions respondents were mostly concerned about the extra workload and effort required by OL. This was despite the fact that there is less concern with the availability of assistance (6, 22) and with steps taken by the institution to mitigate the impact of OL on respondents (21, 6, 22). These findings are consistent with the content analysis of the documents that showed institutions increasing their level of assistance (see the section on Interviews and Content Analysis).

Change, was measured by addressing attitudes towards two sub-clusters of this variable: institutional change and job change (see Figure 4). The answers in the cluster of questions related to job change (9, 10, 25, 26) had an overall mean of 2.52 and SD of 0.63 showing a mid-level degree of concern. The answers in the cluster of questions related to institutional change (11, 12, 27, 28) showed an overall mean of 3.07 and SD of 0.44 pointing to a high degree of concern with strong agreement among respondents.

Figure 4. Change

Institutional Change Mean: 3.0751 (N = 376) Standard Deviation: 0.445480 *Note: items 9, 10, 12, 25, 26, 27, and 28 are reverse coded.*	Question Mean	Question Standard Deviation
9 Integrating OL will bring about changes to my institution's operating structure.	3.07	0.640
25 The more my institution uses OL the more my institution will change.	2.97	0.630
10 OL will require student services to change.	3.09	0.695
26 Online students and traditional students require different support services from my institution.	3.19	0.597
Job Change Mean: 2.4113 (N = 372) Standard Deviation: 0.63415 *Note: items 9, 10, 12, 25, 26, 27, and 28 are reverse coded.*		
11 OL will make my job more interesting.	2.53	0.933
27 OL will make my job harder.	2.49	0.801
12 OL poses a threat to my job.	1.98	0.881
28 I do not have the proper training to use OL effectively.	2.64	0.940

Based on individual answers, the attitudes of respondents indicate a higher degree of concern with institutional change (ranging mostly between 3.07 and 3.19) than job change, ranging mostly between 2.49 and 2.64. Also, the SD identifies that the degree of agreement among respondents' attitudes about institutional change, is much greater at around .6, while towards job change the level of agreement is less at SD .8 to .94. We observed that respondents are concerned that OL will result in changes to the structure and operation of their institution (9, 25, 10, 26) and there is a high mean and moderate deviation among their views. While respondents feel that these OLI related changes could make their job harder and less interesting (11, 27) they do not see it as a threat to their job (12) thus causing only a mid-level to low degree of concern (27, 12). The interviews and content analysis attributed this last finding to a high level of job security and professional autonomy of respondents and their ability to control work-related change, but having less control of environmental change.

Cost-benefit measured in questions (13, 14, 15, 16, 29, 30, 31, 32) shows an overall mean of 2.52 and an overall .45 SD, indicating a mid-level of concern and a high level of consensus among respondents towards the cost-benefit of OLI.

Figure 5. Cost-Benefit

Cost-Benefit Mean: 2.5250 (N = 345) Standard Deviation: 0.45357 *Note: Items 14, 15, 30 and 31 are reverse coded.*	Question Mean	Question Standard Deviation
13 My institution can increase its funding by enrolling online students.	1.99	0.682
29 OL is a more cost-effective method than on-campus instruction.	2.54	0.827
14 My institution will need more funding to use OL effectively.	3.15	0.705
30 My institution does not have the resources that it needs to use OL effectively	2.65	0.751
15 At my institution there are better uses for funding than engaging in OL.	2.64	0.903
31 OL is taking funding away from higher priority areas.	2.40	0.803
16 Institutions that use OL are more cost-effective than institutions that don't.	2.59	0.736
32 OL will enable my institution to serve more students with its present budget.	2.22	0.747

The findings of a mean of 3.15 for question 14, and 2.65 for question 30, show that respondents' greatest concern, involves the need for increased funding. Data also indicates some hesitation about OLI as a funding priority with questions 15 and 16 showing mid-level means of 2.64 and 2.59 respectively, and question 31 a slightly lower mid-level mean of 2.40. Question 13 (mean of 1.99) points to the belief that OL enrolments will bring funds to institutions, yet questions 16 and 29 with means at the 2.5 level show a mid-level of concern that OL is not cost-effective. Data obtained for the cost-benefit questions points only to a moderate level of concern regarding issues of cost-benefit related to OLI, and a higher degree of attitudinal agreement of SD 0.45.

Note that in each of the above clusters of questions the SD among individual questions shows a larger range, indicating disparity of perceptions regarding individual questions, while the overall SD of each cluster, as a group of interrelated responses, is much more cohesive.

Interviews and Content-analysis Triangulation

The findings from Section One of the questionnaire, dealing with attitudes toward OLI were supported by both interview and content analysis findings. Interviews were open ended, asking respondents to identify what helped and hindered OLI at their institution, in order to further confirm the four variables used in the questionnaire and identify attitudes towards them. The 39 interviews show that faculty and administrators raised concerns related to the four types of variables consistent with the findings from the questionnaire. The interviews indicate that both faculty and administrators question the cost-benefit and effectiveness of OLI with over 50% of respondents commenting that students were served better through on-campus courses. Many (70%) felt that institutions were providing adequate support, including access to equipment and training. However, several commented on the need for training not just on the technology but also on the design of instructional materials related to their discipline in order to increase OL effectiveness. In three of the four institutions the respondents perceived that faculty were not playing a significant role. Nevertheless, several respondents commented on the need to better integrate OL into faculty operations in order for it to be better accepted. The interviews helped to clarify the questionnaire findings by showing that although faculty and administrators may have questions about the benefits of OL they are open to participating in making it more effective and want to take a stronger role in its implementation.

The content analysis looked into documents provided by each institution and at provincial policy papers. They were used to identify the goals of OL policy, and the importance allocated to it as defined by priority and intended outcomes, as well as by resource allocation and institutional processes changes. The analysis showed that OL is an important policy reflected in strategic and service plans across the institutions and in the formation of a major provincial program: BCCampus—meant to foster and coordinate OL among post-secondary institutions. Each institution had identified its OL policy goals and the means by which it intended to implement OL. Although institutions were at different stages in their OLI development, it was clear that each had taken steps to allocate resources by providing some funding for technology, training, and assistance. The analysis pointed to a commitment on the part of institutions, at least at the declarative level in their policy documents, to support the implementation of OL and to participate in BCCampus.

The findings obtained in our study that show increasing institutional involvement, yet concern by faculty related to OLI is consistent with Allen & Seaman's (2006) study involving 2200 colleges and universities, that indicated while more institutions are engaged in OL, there is a lag in the number of faculty at these institutions using OL. Our attitudinal findings, at a mid-level of concern, may help to explain this gap. It also indicates that at only a mid level of concern, negative attitudes may slow implementation efforts, but are not strong enough to constitute an impediment to its ultimate acceptance.

Findings: Attributes

Section Two of the questionnaire used demographic data to investigate the influence of attributes of faculty and administrators on their attitudes toward the implementation of OL. The data pertained to four attributes: *position* (faculty or administrator), *subject of instruction, years of experience in their discipline,* and *level of experience with OL.* Responses showed that participants are mainly faculty (90.6%) with 78.9% involved in academic subjects vs. career subjects. About half of the respondents (52.9%) had over fifteen years of experience in their disciplinary field. Most respondents had a low (32.4%) to moderate (31.6%) level of experience with OL.

A regression analysis was used to determine if there was a correlation between the attributes of respondents and their attitudes towards OLI. When we looked at the *position* attribute (faculty, administrators), a statistically significant negative relationship, at $p < 0.01$ was found

between *position* and level of conflict, suggesting that faculty express a higher degree of concern towards OLI than administrators. When the correlation between level of concern and *subject of instruction* was analyzed it showed a statistically significant negative relationship, at $p < 0.01$ indicating that those teaching academic subjects had higher levels of concern with OL than those teaching career subjects.

For the attribute of respondents' years of experience in their respective discipline we used the following categories: 0 to 5, 6 to 15, and over 15 years of experience. We found 52.9% of respondents had over 15 years of experience, 12.8% had 0 to 5 years of experience, and 34.3% had 6 to 15 years of experience. When *years of experience in their discipline,* was regressed on level of concern it showed that *years of experience* working in one's discipline did not influence attitudes toward OLI. This was identified by a Beta of .009 that is not significant.

Finally, the respondents' attributes related to *rate of online experience* were analyzed by asking respondents to self identify their level of experience as: none (0), low (1), moderate (2), and high (3). Responses show that 32.4% identified low levels of experience, 31.6%—moderate experience, 24.2%—high level of experience, and 11.8%—no experience. When this attribute was regressed on their attitudes it showed a statistically significant negative relationship, at $p < 0.01$ such that the greater one's level of perceived experience with OL, the lower the level of concern. This indicates a correlation between the length of online experience of respondents and their level of reluctance or acceptance of OLI.

The analysis of respondent information in Section Two of the questionnaire shows a relationship between the *position* (administrator, faculty), the *subject area* (academic, career), and the *rate of OL experience,* to attitudes affecting OLI. In this study we did not find a relationship between *years of experience* as a faculty member or administrator and attitudes to OLI. However, the stronger Beta of .321 related to the rate of OL learning experience indicates that it is the attribute with the strongest influence on attitudes.

Summary and Conclusions

This study proposes that by identifying attitudes towards policy, decision-makers can choose appropriate tools to mitigate and facilitate policy implementation processes. The role of this study was to identify attitudes to OLI, and increase awareness about faculty and administrators' views regarding identified barriers to OLI so that they can be addressed in OL policy decision-making.

The hypothesis of the study was that faculty concerns about implementing OL stem from attitudes related to four barriers (*intellectual*

reluctance, support, change, and *cost-benefit*) from distance education literature. These barriers were used as variables in the study and two research questions, related to the variables, were used to identify the type and degree of faculty and administrator attitudes to OLI. A questionnaire was designed to identify attitudinal data regarding the type and degree of concern with OLI and to identify differences in these attitudes between types of respondents (faculty/administrators, academic/career subjects, level of OL experience, years of work experience).

The interviews supported the attitudinal data in the questionnaire enabling us to receive further information about attitudes. Triangulation allowed us to assess the reliability and validity of data. The content analysis provided factual information, mainly regarding how OLI policy goals and means were addressed in each institution. This helped us to better understand degrees of resistance or acceptance as triggered by the prospects of institutional or job changes.

In summary, attitudes towards *intellectual reluctance* were identified at a mean of 2.41 and SD .65 reflecting a medium degree of concern related to this OLI barrier. The attitudes towards *support* were identified as 2.61. This is a slightly higher degree of concern than in the case of intellectual reluctance. Furthermore, the SD of .46 is relatively lower than for the previous cluster, therefore providing evidence that there is a higher level of agreement among respondents regarding *support*. *Change* involved two possible sub-variables affecting attitudes: job change and institutional change. The responses received for each of the two sub-clusters varied considerably. While OLI impact on jobs may lead to a moderate degree of concern at mean 2.41, the mean triggered by institutional change, was considerably higher at 3.07. The SD for the first sub-cluster is .63 while for the second is .44 indicating that there is more attitudinal agreement among respondents regarding reluctance caused by institutional change vs. job change. *Cost-benefit* is mainly related to issues of priorities, resources, investments, benefits and effectiveness. In this case the respondents' SD was .45 indicating cohesiveness of perceptions toward the degree of concern triggered by cost-benefit considerations at a mean of 2.52.

Respondents' attributes pointed to possible relationships between the attitudinal findings and reluctance (acceptance) of OLI. Of particular importance to decision-makers are the findings that there is a relationship between attitudes and *position* (faculty or administrator), *subject of instruction,* and *level of experience with OL;* but no relationship between *attitude* and *years of experience in a discipline.*

Relating to this study's hypothesis, the findings (a) reinforce that attitudes to OLI are influenced by the four barriers identified in the DE literature; (b) in order of contribution to degree of concern with OLI, the

barriers are: institutional change, support, cost-benefit, intellectual reluctance and job change: (c) finally, and promisingly, attitudes show an overall mid-level of concern with OLI.

Since OL can be a contentious area we expected that the level of resistance to implementing OL would be higher. Having said that, we do note differences among the four variables, in general, and among individual questions in the clusters, in particular, with the highest degree of concern triggered by perceptions of institutional change. This is consistent with policy implementation theory and contingency theory that acknowledges the resistance of organizational changes in institutions. Furthermore, attitudes affecting OLI were found to be consistent across institutions.

The contribution of this study is that it acknowledges the role that attitudes play in OLI and by so doing it brings attitudinal influences onto the OLI policy agenda. Mainly, the study explores what affects OLI, from an interests and values perspective, vs. the technological and administrative perspective that is prevalent in this field. The study uses the knowledge base of policy implementation and contingency theory, to address implementation issues raised in DE and OL studies. The tools developed can be used in the field, and their findings have the potential to provide OL implementation answers that can be addressed by both scholars and decision-makers involved in OLI.

We recognize that attitudes are an important influence on OLI and therefore we propose that further research be conducted touching on: (a) interests, values, and beliefs, affecting the OLI process (b) attitudes toward different context variables in the OLI process and (c) the affect of attitudes on OLL implementation outcomes.

Endnotes

i The scree plot based on the analysis of 386 respondents revealed that the slope on seven of the component numbers above eigenvalue = 1 are significantly different. Therefore seven factors were selected when performing the Varimax rotation of the data. In the Rotated Component Matrix, each variable that scored equal to or greater than –0.3 and +0.3 was considered a significant loading on a given factor. The questions that loaded on component 1 –4 related mainly to the barriers of intellectual reluctance, support, change, and cost-benefit.

ii Skewness was at 0.267 with a standard error of 0.136. The skewness to standard error ratio was 1.96 that was not significantly skewed. Kurtosis was at 0.397 with a standard error of 0.271. The standard error ratio was 1.46 which is judged not to be a significant kurtotic.

iii The relationship between the difference in level of concern at institution 2 and institution 1 and the overall level of concern was tested. Where institution 2 is the independent variable and reluctance to implement is the dependent variable Beta is - 0.063, which is not significant. R squared is 0.004 with a SE of the estimate at 0.3875. The results suggest no statistically significant relationship, such that the

difference between institution 2 and institution 1 does not affect the overall level of reluctance. The relationship between the difference in reluctance levels at institution 3 and institution 1 and the overall level of reluctance was tested. Where the independent variable is institution 3 and the dependent variable is reluctance to implement. Beta for Model 1 is -0.037, which is not significant. R squared for Model 1 is 0.001 with a SE of the estimate at 0.3880. The results suggest no statistically significant relationship, such that the difference between institution 3 and institution 1 does not affect the overall level of concern. The relationship between the difference in reluctance levels at institution 4 and institution 1 and the overall level of reluctance was tested. Where the independent variable is institution 4 and the dependent variable is reluctance to implement Beta is 0.180, significant at $p < 0.01$. R squared for Model 1 is 0.032 with a SE of the estimate at 0.3819.

iv This generalization is presently further investigated in a Standard SSHRC project involving 30 institutions of HE across Canada.

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