

A Planning Strategy Model for the Development of Online Courses

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Abstract: This study was conducted to develop a planning strategy for the development of online courses at higher educational institutions. Forty-four faculty from eleven University Council for Workforce and Human Resources Education institutions (UCWHRE), who have delivered various forms of distance classes, were involved in the study. A modified Delphi technique was used and four surveys were conducted to complete the study. Kendall's Coefficient of Concordance (Kendall W) and Chi Square were used for analyzing the correlations and relationships of the responses. Eight elements were suggested and considered to be important for the strategy – Course selection, Instructional strategies, Delivery technology, Faculty delivery/Teaching preference, Student learning preference, Technology skills, Student evaluation, and Course/faculty evaluation. Also, 42 factors and 135 sub-factors were generated from the analysis of the data. The faculty indicated that the planning strategy would help them to accurately plan, design, and develop their online courses.

Introduction

In today's online classes educators are faced with the challenges of converting traditional classroom activities to online class realities (Simmons et. al., 2000). Their expertise in transferring and transforming traditional class activities to an online environment without affecting students' concentration, motivation, thought, mastery, and comprehension was critical for the success of effective teaching (Conrad, 2002). In addition, their ability to deliver the same quality of education as the traditional class format could influence future expectations regarding online form of delivery.

In the context of current practices, distance educators need more than the conventional distance teaching techniques to assure effective instruction and learning (Dede, 1998; Moore, 2003). Nevertheless, many new "adopters" of distance education had the perception that their instructional strategies were dictated by the distance education technologies, although scholars and practitioners in distance education disagreed with such a perception (Dede, 1998; Greenwood & McDevitt, 1987; Herring & Smaldino, 1997; Souder, 1993). Distance technologies were tools and not "the ultimate vehicle" to accomplish distance educational goals. These scholars believed creativity of the instructor (i.e. to choose relevant strategies, consider a variety of techniques, access new possibilities, and adjust certain traditional skills) was an equally important (if not more important) factor for the success of distance instruction.

According to the National Center for Education Statistics (1999) the number of traditional courses converted to online courses had rapidly increased, but faculty at the university level still lacked the experience and skills in dealing with online course development. One of the

primary reasons this was happening was related to misuse and misunderstanding the planning process for developing online classes. Other studies found that faculty felt there was a lack of appropriate strategies to properly plan, design, and develop their courses (Richardson, 1984).

Scholars agreed that planning for instruction was one of the most important and complex tasks of an educator (Dick & Carey, 1996; Gagne, 1992; Moore, 1997), because the planning process involved orchestrating all elements within the class such as the instructor, students, materials, content, and technologies (Moore & Kearsley, 1996). The complexity of this situation became clear when one considered the diverse populations of students (i.e. regional, class, culture etc), rapidly changed technologies, and the exponential expansion and growth of knowledge (Moore, 1999). The question of how these factors affect online course development should always be at the forefront of the decision making process in online teaching. Close examination of these issues suggested that the most promising approach to solving this problem was to insure effective and efficient online education instruction, setting, and sources which could be achieved through a proper planning (Matsom, 2003b).

Statement of the Research Problem

The literature suggesting human elements and technology functioned as a single entity in the planning and developing online courses was limited in quantity and scope (Simonson, Schlosser, & Hanson, 1999). Generally, the topics addressed the existing online courses using the existing instructional design models (Seels & Glasgow, 1997); how these course were developed by trial and error (Matsom, 2003a); and studies that focused on teaching approaches and technologies. The importance of human elements in the planning process where technologies and humans were inseparable and were equally crucial for the success of the planning model was not adequately addressed. Taking these factors into consideration, the new “adopters” and novice online faculty were faced with challenges when planning online courses. It is suggested here, one of the solutions to these challenges is to develop a planning strategy that emphasizes the interaction of many variables in teaching and learning that enable college faculty to revisit their online course development.

Purpose of the Research

The purpose of this study was to develop a scholarly decision making planning strategy for online course development at the university level. Result would provide educators with information with which they can better understand, plan, design, develop, and manage online courses using the internet as the delivery tool. In accomplishing this purpose the following objectives were developed: (a) to determine the elements and factors of the strategy, and rank them in the order of sequence, and (b) to determine if the planning strategy would be helpful for online course development for faculty in higher institutions.

The need for this decision-making planning strategy was obvious because: (a) distance education was still at its infancy (Matsom, 2003a); (b) advancement of distance education technologies had contributed to the sophistication of teaching and learning at a distance (Moore, 1998); (c) systemic and systematic approaches of planning distance instruction were important (Dick & Carey, 1996); and (d) there was a lack of empirical planning guidelines to connect the

various level of planning (institutional, program, and instructional) to the development of online classes (Matsom, 2003a). Currently approaches of developing online courses are implemented without giving much attention to the transitional elements that “connect” the above mentioned factors with the instructional design. In identifying the “missing link” (i.e. institutional, program, and instructional planning) the researcher would contribute to the improvement of the decision making process in the planning for the development of online courses.

Research Method and Procedure

This study used Delphi technique and involved forty-nine faculty at University Council for Workforce and Human Resources Education institutions (UCWHRE). This technique was used as the method of data collection because: (a) it allows informal intuitive judgment, anonymous response, controlled feedback, and statistical group response (Weatherman & Swenson, 1974); (b) it permits multiple surveys and data collection to be conducted from a distance (e.g., via e-mail and U.S. Postal service); and (c) it is known to be a very successful tool when used as an intragroup communication device in educational settings (Kauffman, 1976).

Population

All faculty that were involved in this study met the following criteria: (a) they were familiar with both distance learning and traditional face-to-face delivery; (b) they were teaching in four-year college programs; and (c) their involvement in distance learning was voluntary. These faculty were grouped into three different panels and each group carried a specific task. The groups were: (a) the Reviewing Panel, which consisted of two faculty who were involved in the first three rounds of the survey to analyze, synthesize, and review the survey materials; (b) the Validation Panel, three faculty who were involved in the first three rounds of surveys to validate the instrument; and (c) the Delphi Panel (i.e. the respondents) consisting 44 faculty who were the primary respondents for all four rounds of Delphi surveys.

The number of respondents in this study (i.e. 44) exceeded the maximum number of 30 participants as suggested by Zemke (1982). This number was important because: (a) usually a Delphi study took a long time to complete, therefore, respondent withdrawal was expected; (b) the Delphi process required at least two surveys as a minimum (Zemke, 1982), and in this study four surveys were conducted; (c) random selection of participants was not administered because the Delphi method relied on expert opinions and/or suggestions, knowledge, experience, talents, and intuitions (Masini, 1993); and (d) participants from diverse backgrounds (in term of seniority, title, distance classes experiences, traditional classes experiences, etc) were included in this study to enrich the collected data (Wicklein & Rojewski, 1999).

Method of Data Collection and Analysis

This study was found to be best conducted using the modified Delphi approach that was fashioned from studies conducted by Wicklein and Rojewski (1999) and Farmer (1997.) In their methods, a content guideline was listed in the first round survey in order to help the respondents with initial information of the study. By doing this, the responses would be focused within the context of the area being studied.

Four surveys were administered according to a specific sequence for the purpose of maximizing the validity and reliability of the responses. The first round survey asked the respondents to suggest elements for the strategy; in the second round the respondents were asked to review the elements and to suggest factors and the sub-factors for the strategy. The

respondents were asked to rank the elements of the strategy in the order of sequence, and ranked the factors in the order of importance in the third round survey. Finally, the fourth round survey asked the respondents to review and reconfirm the ranks as suggested in the third round survey. Additionally, questions were posed in the fourth round survey to investigate their need for the strategy. This study was successfully conducted in six months, and the results of the study were translated into the planning strategy model. The data collected in the study was analyzed using Kendall Coefficient of Concordance (Kendall W) and Chi Square. These methods allowed the relationships and the degree of association among the data to be interpreted and determined.

Findings

The final analysis generated eight elements, 42 factors and 135 sub-factors for the planning strategy. As shown in Table I, the *lowest mean* indicates the *highest* in the rank for each element and factor, whereas the *highest mean* indicates the *lowest* in the ranking. The analysis on these elements showed strong agreements among the respondents on the rankings in the order of sequence and importance. In addition, the null hypotheses of the ranking (Ho: There was no relationship between the individual respondent on the ranks of the elements of the strategy in the order of sequence and importance.) was tested by converting the Kendall W value into the Chi Square. The value of the Kendall W statistic ($W = 0.5643$) for the elements in order of sequence when computed to a Chi Square value was found to be statistically significant ($X^2 = 41.3377$, $df = 30$, $p < .05$); therefore the null hypothesis was rejected.

Elements	Mean	Rank
Course Selection	1.03	1
Instructional Strategies	2.37	2
Delivery Technology	2.83	3
Teaching Preferences & Delivery	4.07	4
Students' Learning Preferences	4.70	5
Technological skills	5.50	6
Students' Evaluation	6.67	7
Course Evaluation	7.90	8

Table I: Comparison of Ranks of Elements on Sequence

As shown in Table II, the comparison of means for all factors that were ranked as the first (highest) in each element indicated the respondents showed stronger consensus only on some factors; these are: Course Selections – Goal of course (mean = 1.37); Instructional Strategy – Interaction strategy (mean = 1.87); Delivery Technology – Accessibility (mean = 1.30); Teaching Preferences & Delivery – Purpose of teaching (mean = 1.47); Students' Learning Preferences – Learner characteristics (mean = 1.70); Technological Skills – Support needed (mean = 1.13); Students' Evaluation – Quality of assessment (mean = 1.23); and Course Evaluation – faculty teaching (mean = 1.13).

Element 1: Course Selection	Mean
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Factors	Goal of course	1.37
	Nature of course	2.53
	Need for the course	2.90
	Content of course	3.67
	Learner composition	4.87
	Regulatory	5.93
Element 2: Instructional Strategy		
Factors	Interaction strategy	1.87
	Support needed	2.57
	Communication strategy	2.93
	Learning & Teaching resources	4.13
	Scope of assignments	5.63
	Type of course	5.63
	Faculty involvement	6.50
	Off class dialogue	7.90
	Interaction strategy	1.87
	Support needed	2.57
Element 3: Delivery Technology		
Factors	Accessibility	1.30
	Tools - software & hardware	2.23
	Support needed	2.70
	Operational cost	3.80
Element 4: Teaching Preferences & Delivery		
Factors	Purpose of teaching	1.47
	Faculty needs and supports	2.20
	Faculty characteristics	3.13
	Course management	3.77
	Distance learning knowledge	6.00
Element 5: Students' Learning Preferences		
Factors	Learner characteristics	1.70
	Students' needs	1.77
	Students' learning style	3.10
	Learner interest or favor	3.90
	Computer skills	4.33
Element 6: Technological Skills		
Factors	Support needed	1.13
	User experience	2.07
	Distance Learning experience	3.06
	Personal knowledge acquired	4.00
	Feedback tools utilization	5.00
Element 7: Students' Evaluation		
	Quality of assessment	1.23

Factors	Types/Methods of feedback	2.33
	Accountability of assessment	3.33
	Interactivity of assignment	4.33
	Format of assessment	4.40
	Ease of management	5.77
Element 8: Course Evaluation		
Factors	Faculty teaching	1.13
	Faculty/course management	1.97
	Cost-effectiveness	3.03

Table II: Ranks of Factors Based on Importance

A statistical analysis on the additional questions in the final survey revealed that: (a) 90 percent of the respondents indicated that the findings of this study would strongly (19.35 percent) and moderately (70.96 percent) influence their current way of handling online course/distance learning; (b) 71 percent of the respondents showed that this study could influence how they handle their planning for online classes; (c) 61 percent of the respondents answered that their course design would be influenced by this study.

Finally, Seels and Glasgow (1997), Smith and Regan (1996) and Dick and Carey (1996) contended that linearity of steps in planning for instruction only occurs in a simple planning process. For a complex process of planning, such as developing a reflective instruction, the flexibility of the steps would be crucial in determining the ability, reliability, and effectiveness of the strategy. Taking both categories of data (i.e. the results of the Delphi study and the review of literature) into consideration, a strategy for planning instruction for online courses was developed as in Figure I.

Discussion and Implication

In general, faculty in higher education realize that online courses will become one of the mainstream educational formats in the future. They also understand the usefulness of a planning strategy in their effort to develop online courses. From this study, it is obvious that these faculty are aware that a systematic planning approach is important in designing their online classes, and that it will have a positive influence in their course development. The findings show that they believe planning strategy is important to help them to convert, transfer, and transform traditional classes and other forms of distance classes into online courses.

Based on our experience dealing with online classes, there are other factors which should be included in this study and that will have influence the effectiveness of the planning strategy model. These deserve serious consideration.

1. Contemporary technologies (i.e. computer and information) that are used to deliver distance classes are getting more sophisticated, advanced, flexible, versatile and scalable; therefore, these technologies are always relevant to the dynamics of "new forms" of distance classes. Conversely, educators and learners may sometimes be intimidated by the technologies, and often require updates in their computer related operation skills.

2. Usually the effectiveness of online teaching depends on the three elements of the model (i.e. Teaching Preferences and Delivery, Students' Learning Preferences, and

Technological Skills) and how these elements interact with the Delivery Technology. For this reason, it is very important for users of this model to balance the appropriate use of each of these elements accordingly.

3. Latest Instructional Design (ID) models indicate the interactions of elements in a model are non-linear, cyclical, and continuous (Seels & Glasgow, 1997). Even the earlier models of ID have to be re-evaluated due to new approaches of teaching and learning (i.e. contextual, hands on, situated, distributed, etc.) In order for effective teaching to occur, it is recommended that the context of the course is considered when using this model.

Taking the above factors into consideration, the model of the strategy is improved as shown in Figure 1. Also, the improved model is more realistic and more viable in the new forms of online course planning. In addition, the model is divided into four sections as follows:

1. Course Scanning. This section addresses the suitability of the cause for online delivery (completely and/or partially or should it be offered online at all);

2. Communication and Interaction Monitoring. This section addresses the appropriateness of using certain technologies; explores education factors that will enhance faculty teaching and student learning; and addresses the issues of how well faculty and students can use technologies;

3. Class Management Coordination. This section addresses the issues of effectiveness and efficiency to implement teaching and learning in an online environment (how, what, when, and where); and

4. Value Consideration. This section addresses the testing and evaluation approaches (what, how, when, and where) and their administration; and the quality, reliability, and validity of the performance and products of the course.

Future Research on the Planning Model

This study addresses basic needs, elements and factors of a planning strategy that is specific for online course development. However, many aspects of the strategy have to be investigated before the validity and reliability of the model can be soundly justified. In order for this model to have a greater role in future online course development, the following concerns need to be addressed:

1. A comparative study is needed to determine the degree of improvement for online class planning that this strategy will provide. Primary emphasis should be on the comparison between the utilization of this model prior to using Instructional Design (ID) in the development process of online courses, and the development of online courses that only used ID.

2. A study should be conducted to determine whether the factors of the strategy are overlapping with the factors in the program planning and instructional planning models. It should also examine the process of the three planning models (program planning, online course planning and instructional planning) and how they interact with each other.

3. A follow-up study is needed to validate the findings of this study. It should examine how the faculty prioritize the elements and factors in the model when their teaching experience (number of years) were not the same, and to investigate why the pattern occurs.

4. A strong agreement existed among the faculty that online learning will become more popular in the future. However, what still requires study are the processes (i.e. planning, designing, developing, and implementation) of converting traditional courses into online courses with which these faculty need the most assistance.

Recognizing the importance of the above concerns will be critical for the success of this planning strategy. Nevertheless, as a start up model for planning online courses that is developed based on empirical data, its advantages in planning online classes should not be overlooked.

Conclusion

In general, based on the literature and Delphi surveys it can be concluded that the key for effective online classes is to have a good planning strategy that encompasses several elements that are critical to teaching and learning processes. This is especially important when the faculty in this study clearly demonstrated appropriate skills and knowledge to teach effectively but showed concerns about their online class planning. Also, they recognize that a systematic approach is important in planning their online classes, and is needed to guide them when converting traditional classes and other forms of distance classes into online courses.

Overall, this study has achieved its objectives (i.e. the development of a planning strategy for online courses), and has revealed various aspects of concerns in online class development. It is also important to acknowledge that faculty in higher educational institutions have the skills and experience to offer quality online courses. In order to achieve this, they must be provided with adequate training and an appropriate planning strategy in developing their classes. Therefore, this newly developed strategy should be useful for them to develop more effective and efficient online courses.

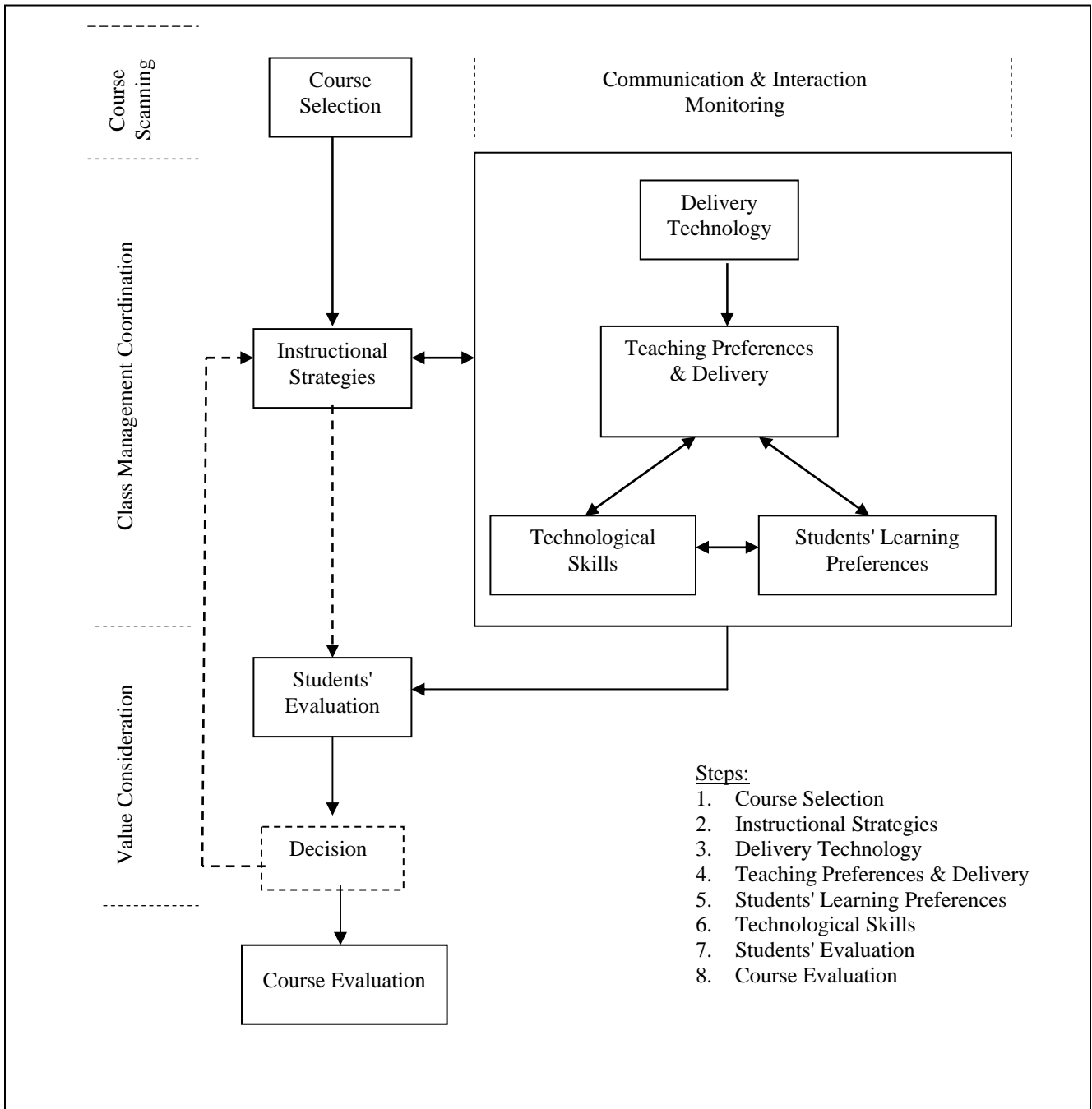


Figure I. A Decision Making Planning Strategy for the Development of Online Courses

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