A Planning Framework for Choosing Communication Activities in E-Learning

Introduction

In this chapter, we present a framework for planning CMC activities according to the level of structure and potential dialogue desired in a given course. This framework serves as a tool for making decisions about how to give students more or less autonomy, how a series of course activities can be scaffolded, and the amount of structure or instructor facilitation that is needed. The framework we have developed uses each variable of the transactional distance theory as a dimension, together displayed is a quadrant allow us to represent instructional strategies and different e-learning communication activities.

Over the past ten years, the use of discussion forums or bulletin boards to support asynchronous learning communications has become a common practice within mixed-mode and online courses. Both pedagogy and context serve to drive and influence the use of this technology. The interest in constructivist approaches in the design of learning contexts has resulted in the creation of communication spaces where interaction, participation and negotiation of meaning can take place. At the same time distance education has increasingly moved online, the choice to use an asynchronous tool for communication seems to be well suited to this mode of delivery where teacher-student (TS), student-student (SS), and student-content (SC) interaction is influenced by geography, time zones, and personal scheduling conflicts.

In distance education, course development can be an individual or collaborative effort involving instructors, course authors, and instructional designers. For the purpose of this chapter, we will refer to the role of the instructional designer, since that is the perspective that we occupy in our own institution. However, regardless of whether development adopts a solo or team approach, there are a myriad of decisions to make when constructing online activities that support the TS/SS/SC interactions. These include decisions around how the activity will be organized, the kind of facilitation that is needed, and the type of assessment and feedback that will be provided. Furthermore, the use of technology enables the implementation of collaborative practices, and with a greater emphasis on learner-centered approaches, online learning technologies have evolved considerably in the last ten years. In 1998, Bonk and King recognized the challenge that the new educational landscape presented and noted that "with all these new learning channels, educators are faced with unprecedented educational opportunities and challenges. Without question, the formats for electronic collaboration are proliferating" (Bonk and King, 1998, pp.5). Almost ten years later, while text-based discussion forums still dominate as a means of class communication, these communication spaces now might include voice or video. Although there are many innovators exploring new technologies and approaches, it is still a challenge for instructors to find ways to enable the best potential of the technologies and strategies

available.

As instructional designers, in developing courses for online learning we know that computer mediated activities should not be used indistinctively, since each one of them has the potential of being pedagogically effective and enhance the quality of the learning experience for a particular set of course objectives and needs of the students. When instructional designers work with subject matter experts they often offer a choice of different delivery models in an effort to find an approach that will address the needs of the course objectives and content while taking into account the teaching style of the instructor (Belfer, et al, 2000). Therefore, how do developers choose between all the options? How can instructional designers ensure that their decisions are pedagogically grounded?

Background
For the purpose of this chapter, we adopt the framework developed by Zemsky and Massy (2004) and define e-learning as distance education. Our framework has been developed through the course of our work as instructional designers in the Centre for Distance Education and Technology (DE&T) at the University of British Columbia (UBC). Initially we began compiling computer mediated activities into a matrix format, identifying the type of activity, the structure that was needed, the role of the students and the instructors in that activity, and strategies for assessment. The matrix grew to a size that became unmanageable and suffered from two major flaws—although it was useful as an activity selection tool for an instructional designer, 1) it didn't leave much room for consideration of an instructor perspective or their teaching style, and 2) was not able to visually show how activities could potentially evolve during the delivery of the course.

For example, we were able to give recommendations around the components of an instructor-lead class discussion activity, but this said little about the level of control that the instructor might exercise in the facilitation of that discussion activity—an instructor who preferred controlled discussions might take more control of the discussion than an instructor who preferred students to take the lead role in the facilitation. We also recognized that the same activity (such as class discussion) could look very different depending on how it was structured, the role the instructor would take, and the role the students might take in that discussion. We also observed that an activity that adopted the same structure and roles for instructors and students could play out very differently depending on who the instructor was, or if students came from different programs. In our own experience as instructors we know that, this is hardly surprising, since instructors recognize that with every group of students the same activity is rarely predictable, even if the instructor remains the same. But it challenged us to attempt to identify the variables that need to be considered in designing CMC activities.

This current work has been influenced by a few dominant theories of learning and distance education, such as Moore (1973), Pratt (1998, 2002), and Saba (2003), as well as current research on student perceptions of asynchronous discussions.

Transactional Distance Theory
Transactional distance theory was introduced by Michael Moore to the field of distance education. This theory dates from 1973 and was developed at a time when distance education was characterized by correspondence courses (usually paper based), where a geographic separation between the student and instructor allowed few opportunities for

interaction. However, rather than focusing on the geographic characteristic that defines distance; Moore attempted to identify the psychological distance in distance education.

In his theory, Moore focuses on the interplay of three variables that define the learning transaction between teacher and students — structure, dialogue and autonomy. Structure refers to the design of the course and the level of control that the instructor or students have within that structure. Dialogue refers to the positive or constructive interactions between the student and the instructor and/or the internal dialogue of the student with him or herself. Autonomy refers to the ability of the student to take responsibility for his or her own learning. Therefore, a learning context that has a high level of structure and little dialogue would have a large transactional distance. A context that had a low level of structure and low level of dialogue would also have a large transactional distance and would additionally require a higher level of autonomy on the part of the learner. However, the same context with a high level of dialogue would potentially be less distant.

There are potentially many secondary variables that have an influence on the transactional distance. These include the mode of communication or communication tools, the characteristics of the learners, the instructor characteristics, and the institutional context. In the context of the student, the mode of communication is particularly relevant since it directly relates to the language of instruction. For example, research indicates that students who are interacting in a second language will benefit more from asynchronous communication (typically text discussion forums) since it allows them more time to process the message, the option to reread or replay, and to construct responses on their own time (Carey, 1999, Carey & Guo, 2003).

It is not difficult to see how asynchronous discussions provide a potentially important role in facilitating dialogue and thus reducing distance. Yet, we often see courses that have not adequately considered the relationship between dialogue, autonomy and structure—in an online context where students are at a distance, we know that some structure needs to be provided in order for students to be able to locate themselves within the environment. When students are left fumbling to understand what is expected of them and how to go about doing it, more autonomy is needed on the part of the student. This is not to say that encouraging students to be more autonomous is detrimental to learning; rather we are suggesting that the push to be more autonomous also needs to be properly planned.

Research has shown online discussions do improve student's perceptions of learning, motivation, enjoyability (Wu & Hiltz, 2003), and content mastery (Alavi, 1994). Riddle, et al. (1997) suggest that the reasons behind increased involvement and learning relies on the connectivity between students and teachers. If that is the case, one would expect that any of the implementations that have been documented in the literature regardless of whether they are teacher-lead (Maor, 2003), student-lead (Hara, Bonk, Angeli, 2001), case-based (Benbunan & Hiltz, 1999), discourse-based (Pincas, 1998), and/or brainstorming-based (Belfer, 2001) would offer the same positive results.

We believe that good implementation relies in part on the course design, since it speaks to how activities should be constructed and facilitated, but that the instructor's facilitation strategies for course activities are an important factor in influencing student perception of the learning experience.

Teaching perspectives

As instructional designers, we work with course authors who are also instructors in the courses they are developing with us. We are aware that course design should also include some discussion of the instructor/course author's own teaching styles or preferences. In our role it is very important that we are able to communicate with instructors about who they are as teachers and all the options available, both in terms of educational strategies and the available technologies that can enhance and inform the teaching and learning practices.

Dan Pratt has written extensively on teaching and his research suggests that teaching styles (actions) are the observable piece of a very complex framework based on a set of beliefs and intentions, they are rarely directly observed by people when we teach. His research suggests that it is useful to think about teaching in five fundamentally different ways, what he calls five perspectives on teaching. These perspectives include transmission, developmental, apprenticeship, nurturing, and social reform.

The transmission oriented teacher focuses on accurately delivering content to the learners and the relationship is largely uni-directional-- the teacher delivers content and the student passively receives it. With a developmental approach the teacher facilitates the learner's cognitive structure and their understanding of the content. In this way, the developmental perspective is more concerned with cultivating ways of thinking. The apprenticeship perspective is concerned with revealing the inner workings of skilled performance in which the teaching event is situated in an authentic learning environment. The nurturers promote a positive climate and use encouragement and support to help students' achieve the learning goals. Finally, as the name suggests, the social reform perspective is characterized by a need to seek a better society. In the social reform model good teachers challenge the status quo and encourage students to consider the how learners are positioned and constructed in particular discourses and practices: their social, political or cultural ideals are an essential focal point of their teaching perspectives. (Pratt et al, 1998).

In his article Pratt (2002) emphasizes the fact that no one perspective is than another, since they only represent an individual's view of teaching. The key to being a successful instructor is the ability to reflect on the experience and evaluate what they do, why they do it, and on what grounds their actions and intentions are justified. In reflecting on this statement, we are reminded that increasingly instructional designers are encouraged to design courses with more constructivist approaches, since this is what is currently valued in our institutions. Yet, how do you create a course with a collaborative approach if the instructor does not want to monitor or facilitate discussions, and prefers a more direct or transmission approach to instruction?

The Framework

The framework we have developed seeks to integrate the dimensions of Transactional Distance theory. In conceptualizing this framework, we began with Saba's (2003) interpretation of the structure component of this construct (see Figure 1). Structure describes the course design, teaching strategies (activities), learning objectives, and evaluation methods (scoring criteria). Structure is a continuous variable for which the instructor holds direct or indirect control. Students normally perceive it as more or less flexible or more or less rigid.

Figure 1. Saba's (2003) interpretation of the structure variable of Moore's theory.

We then incorporated Saba's interpretation of the dialogue construct (see Figure 2). Dialogue describes the level of interaction between the learner and the teacher, the learner and his/her peers, and the learner and the content. Some elements that taint the students' perception and ability to interact are the language of interaction, the size of the group, and the medium used to mediate the communication. Dialogue is a continuous variable for which the instructor designs activities that require that the student be more active or passive in his/her interactions. Students normally perceive it as more or less interactive.

Figure 2. Saba's (2003) interpretation of the dialogue variable of Moore's theory.

The third component, autonomy, describes the learner's capacity to self manage, self-regulate and be intrinsically motivated to engage with the content to the level of depth needed. Autonomy is a continuous variable over which the instructor has little control. This component is not visually reflected in our framework, since instructional designers and teachers can only work with those variables over which they have some control (e.g. structure and dialogue). Nonetheless, there are some processes that can be put in place to help and support students that are more or less autonomous, by providing more structure or more opportunities for dialogue.

The quadrant (see Figure 3) is our representation of the structure and dialogue dimensions. As we were started working with the quadrant we realized that the left lower side of the quadrant represents the teacher-centered approaches with which the instructor has direct control of the structure and students are passively receiving information. In contrast, the top right represents the learner-centered approaches for which the instructor has indirect control of the structure. Students exercise their autonomy and follow their interests, actively participating in the learning process while interacting with the content, peers, and/or the instructor).
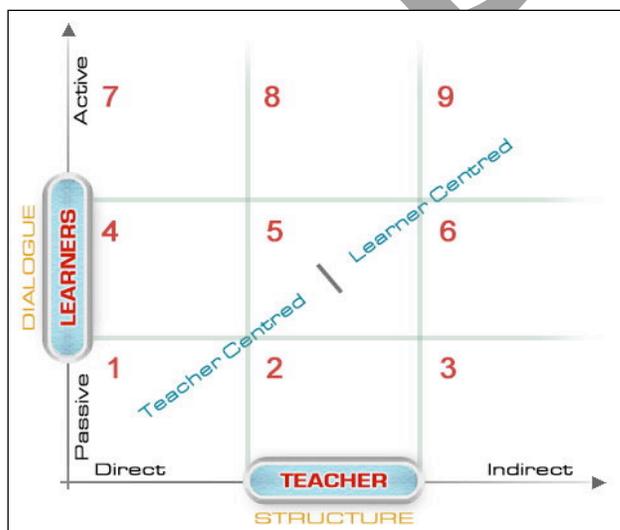
Figure 3. Our adaptation of Moore's model for ID purposes.

The quadrant representation allowed us to begin mapping the different types of e-learning activities in a given course onto the quadrant, while considering the teaching perspectives of the instructor. For example, one of the most common learning activities that are present in many online courses is a forum for announcements, which an instructor can use to remind students of deadlines, important events, or to clarify concepts or points that are not clear. This type of activity logically fits into quadrant 1 because it has a particular function of presenting information to students; the structure is very direct, and little or no dialogue is expected of students.

Another common learning activity is a class discussion forum, where a question is discussed over a certain period of time and involves the instructor and the students. Depending on the structure of the activity, this activity would find itself in any of the quadrants. For this activity to be in quadrant 1 or 2 we would expect:

1. the instructor begins the discussion with a pre-established question
2. students respond once to the discussion according to very specific guidelines
3. the instructor closes the discussion after a specified period of time

For this activity to be in quadrant 8 or 9 we would expect:

1. a student or group of students presents a question to the forum
2. the question is discussed for a period of time or indefinitely
3. students can participate in the discussion and shape the path of the discussion with relative freedom

As instructional designers, the decision to structure the activities in any of the above examples is influenced by the instructor's own teaching perspectives or styles. We would anticipate that different instructors would have a preference for more or less direct control. We might also see a class discussion look more like the first example at the beginning of a course, and then once trust has been established and the community has been built, later class discussions might look more like the second example.

Of course, the location of the activities in the quadrants is also dependent on how the learner approaches the activities. An activity can aim to accomplish and achieve a certain level of activity, but the student can be more active or passive based on his own learning style and willingness to follow the activity as planned, or not as planned. For example, a seemingly passive reading activity can be active if the student is taking notes, chatting with their classmates about the reading, or blogging their thoughts to a wider community of practice. As instructional designers we often try to activate these types of passive activities by including pre-reading questions, reflective questions, or other cognitive strategies. However, ultimately it is the student's own level of autonomy that determines how the student activates their learning within or outside of the course structure. This is why autonomy and self-direction are important characteristics of learners.

Benefits of using this Framework

In our recent work as instructional designers for distance education, we have tested the framework as a conceptual tool for course design, as well as a diagnostic tool for understanding why certain activities are not successful in some of our courses. We have found this framework to be beneficial as a tool for planning the instructional design process, informing pedagogy, and conducting research, as discussed below:

A planning tool for the ID Process
Although we have stated that there is no correct or incorrect way of recording activities into the quadrants, it provides a visual way of mapping ideas during course planning. It allows multiple types of e-learning communication activities to be presented using one visual aid, making it easier to understand what each of them mean, how they are situated within an entire course, and how, based on the consideration of the different variables and desired learning outcomes, they should be best structured and implemented.   For example, when different activities are mapped onto the quadrants, it can help us explain how very structured learning activities can be scaled up to become more learner centered, indirectly structured, or active by increasing dialogue and reducing direct control over the structure (see Figure 4).
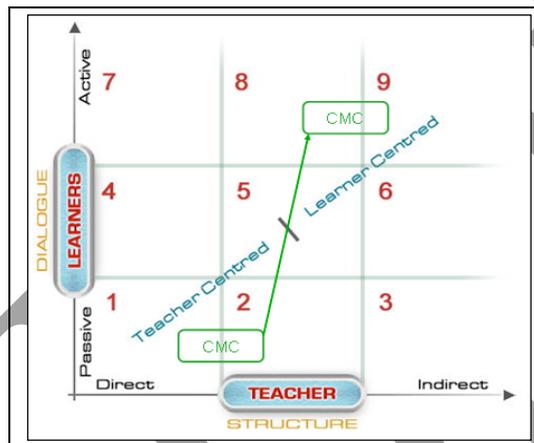

Figure 4. Recording different e-learning communication activities into the framework for ID purposes.

When designing and choosing activities for an online course, we are constantly considering the following components: learning outcomes, content, media, teaching perspectives, and learner characteristics. However, we have found in our own work that we often under-emphasize the importance of teaching perspectives and learner characteristics and focus too much on the learning outcomes, content and the media. The framework forces the consideration of these components and adds an additional dimension to transactional distance—instead of trying to find ways to reduce distance the framework attempts to show how the manipulation of some of these variables can shift an activity to be more or less learner centred. Instructional designers can then decide what variables to work with to increase (or decrease) learner centeredness. For example, if an instructor preferred a transmission approach, online exam activities, and little dialogue with students, the addition of student study groups would be one way of providing more student centred learning within the structure of the course.

The framework is also a tool for facilitating the conversation between instructional designers and instructors when developing or revising online courses and activities. In our own work, we have used this framework as a way to describe the characteristics of a

target group of learners whose prior educational experiences were largely transmission oriented and instructor-centred (see Figure 5). We were then able to understand why some of the very constructivist, learner-centred activities that we had introduced failed to produce good results, while the more structured, direct activities were well received.
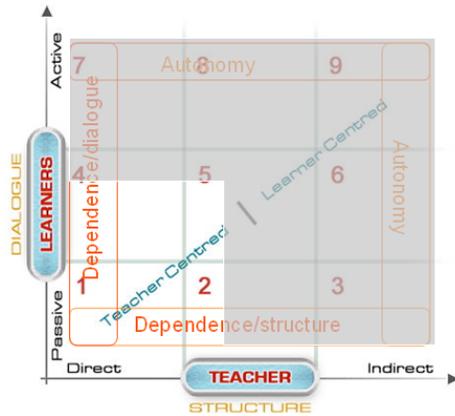

Figure 5. Prior educational experiences a group of learners.

Pedagogical tool

In some cases, we have found that the framework helps to remind instructors what the key elements of the learning process are and helps them focus on the elements that are most important. Most instructors are willing to try new pedagogical strategies in their courses provided that they will allow their learners to be successful. But many are confounded by a lack of time and a need for specific and clear step-by-step guidelines that they can use or adapt to their own practice without a significant investment of time. The framework could be a tool for assisting the instructor in developing and delivering a successful and engaging learning experience by encouraging them to reflect on their own teaching practices as key design elements, which are often left out of the design process or simply taken for granted.

Research tool

As a research tool, the framework can allow both instructors and instructional designers to track how the learning activities evolve and gain insight into how instructors and students cope with changing and evolving systems. In our own research, we are looking at the role of teaching presence in the shift from more teacher centred activities to highly learner-centred activities. The framework provides a way of comparing different activities and identifying important variables that shape these activities (Belfer, 2005).

As with all course planning tools, the success of any plan is only as good as the learning community that implements it and makes it work. We argue that careful planning provides a foundation on which to build a successful learning community, but our framework does not attempt to illustrate the action components of the learning community. To this end, we can refer to the considerable research that Terry Anderson and colleagues have conducted around the dynamics of course-related asynchronous communication. They have developed a community of inquiry model that attempts to identify some of the factors (teacher presence, social presence, and cognitive presence) that facilitate these dynamics during course implementation (Garrison, Anderson, & Archer, 2000).

Our framework facilitates planning of single course activities but at this point in time does not consider the more informal (and largely unstructured) learning spaces that students engage in parallel to course activities, such as their own communities of practice (Lave and Wenger, 1991) or affinity spaces (Gee, 2004). We believe that these informal spaces are important to the development of learning, identity construction, and learner autonomy, and should perhaps be given more consideration in course or program planning.

Future Trends and Conclusion
It is difficult to ignore how communication technologies have influenced teaching and learning environments by providing greater and more varied TS, SS, and SC communication. Until recently, these technologies have been mainly asynchronous text tools such as email and discussion forums, but in the last couple of years we have witnessed the arrival of various additional asynchronous and synchronous tools. Voice tools such as Wimba and Skype and text tools that allow synchronous and asynchronous collaboration (wikis, blogs, synchronous text editing tools such as Writely) offer functionality and collaboration in ways that the early tools couldn't provide. These tools challenge us to rethink course activities and serve to redefine our teaching and learning spaces in positive ways.

It is our belief that the merging of technologies with teaching and learning will become more and more seamless, where a distinction between e-learning and learning will no longer be necessary. Therefore, course design will become increasingly more complex by virtue of the fact that there will be more technological options for the teaching and learning transactions. With this comes the need for a strong awareness of pedagogy and the complexities of learning different types of learning environments. Instructional designers have a role in ensuring that instructors understand their teaching perspectives, and have an awareness of how activities can be designed to support more learner-centered approaches (flexible structure, active dialogue, and room for learner autonomy) while considering all the components necessary to the development of an engaging learning environment.

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