

## Replacing Professor Monologues with Online Dialogues: A Constructivist Approach to Online Course Template Design

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### Abstract

Online course delivery requires a divergence from conventional teaching methods. Many online educators have instituted a constructivist approach to course delivery, but have created superficial connections between the technology used and the approach itself. The following article addresses the value of theory-driven online course development and provides a model for launching a constructivist “best practices” course template.

**Keywords:** Course design, Constructivism, Introduction to Psychology, online template, cognitive theory

### Introduction

A common criticism of Web-enhanced course design is that online components are bells and whistles tacked onto traditional courses, which are costly to add and only minimally enhance the course content. This criticism may well have merit when online delivery focuses solely on providing course content, but fails to create a learning environment that supports the growth of a community of learners and shared knowledge. If courses are nothing more than content, then all students would need is their textbook. Faculty members, however, view the learning community as essential for cognitive growth and the development of critical thinking skills. Similarly, online educators recognize the importance of creating a learning environment that fosters interaction, dialogue, and mentoring in an effort to produce similar learning outcomes as traditional face-to-face courses.

### Role of technology in course template design

Online course template development proceeds differently than the traditional course and requires a fundamental re-thinking of the course, the content, the learning activities, the learning outcomes, and the roles of professors and students. The traditional unilateral dialogue has little impact on student online learning and therefore the roles of faculty and students must be transformed. However, because this transformation requires technological training for both faculty and students, the need for change is outpacing change itself.

Few faculty members have the training in instructional design or learning theory needed to create a well-designed online course (Oblinger & Hawkins, 2006). Most faculty operate in isolation without the assistance of an instructional designer, who would provide the needed expertise in course development and assist with additional issues related to maintaining a website, such as selecting a platform for the course, updating links and software, and providing support for technology-related questions. However, Instructional designers and technology experts often approach course design with a deterministic view of technology, which leads them to organize the course to meet the needs of technology instead of the needs of the course (Gerber & Scott, 2007). This approach can lead to superficial connections between the features of a specific platform and the principles of student learning.

In this article, the authors describe the development of a course template designed to provide a unique menu of options for instructors to use when creating a well-organized, theory-based, high-quality online course. The template is designed to motivate instructors to redesign their courses to include technology in the classroom, and subsequently prepare first-year students for future online courses. Faculty worked in collaboration with Instructional designers to produce a 'best practices' course to serve as a model for future online course development.

### **Constructivism and online course template design**

An online course should foster a collaborative learning environment that encourages students' interactions with the course content, the professor, and fellow classmates. Technology alone cannot create an effective learning community without the support of theory to under gird the course design.

Cognitive theories have certain assumptions about the nature of learning and those assumptions have implications for pedagogy and instruction. Student-centered learning is rooted in the constructivist philosophy. Constructivism is a cognitive theory that assumes that all learning is the active process of mental construction. Each learner has unique knowledge that was derived from experience, interactions with others, or through direct training, and learning occurs through relating new experiences to prior knowledge, and constructing new understandings based on what is already known (Sherman & Kurshan, 2005). Constructivism is based on the work of John Dewey, Lev Vygotsky, Jean Piaget, and Jerome Bruner, who propose that students actively construct knowledge in a social context.

The methods of constructivism emphasize students' abilities to solve real-life, practical problems. In a constructivist classroom, students typically work in cooperative groups rather than individually; they tend to focus on projects that require solutions to problems rather than on instructional sequences that require learning of certain content skills. In such an environment, the role of the professor is to provide required resources and to act as a guide to students rather than act as a "sage on the stage" while they set their own goals and 'teach themselves' (Roblyer, Edwards, & Havriluk, 1997, p. 70).

Online educators and theorists have identified the constructivist approach as necessary for student-centered learning (Laurillard, 1994; Mason, 1998; McCombs & Vakili, 2005; Salmon, 2000) and refer to online learning as a socially constructivist experience (Mason, 1998). Learner participation in structured online discussions, collaborative online activities, online assessment, and interactive course materials are ways of promoting constructivism in online pedagogy (Mason, 1998). Findings support that online discussion and collaborative learning facilitate social interaction and building a community of learners (Allen, 2005; Jonassen, 1999; Murphy, Mahoney, Chen, Mendoza-Diaz, & Yang, 2005; Romiszowski & Mason, 1996; Scott, 2007).

Swan's (2005) constructionist model for designing Web-enhanced courses proposes a "learner centered, knowledge centered, assessment centered, and community centered" (p. 6) learning environment. Creating a learner-centered environment requires allowing each learner to bring in their unique experiences, beliefs, knowledge, and perspectives to the course content. In order to build a knowledge-centered course the instructor must emphasize online activities that engage students and help them construct robust understandings of particular topics (Bransford, Brown, & Cocking, 2000). Such activities do not focus on memorization, but rather on integrating the material with personal experiences that are relevant to the students. Swan (2005) further stresses the value of providing continual meaningful feedback to students. According to constructivists, self-assessment is crucial to learning; so, assessment and feedback need to be embedded within online activities. Furthermore, the online environment must be structured to promote a community of learners; that is, the course must be designed to promote students' abilities and the development of new ideas, and also nurture student growth and progress

toward new understandings by integrating new and old knowledge. In such contexts, the community-centered environment includes the social construction of knowledge and the connection of students with the 'larger community and culture' (Swan, 2005). Educators such as bell hooks propose to make the "classroom a democratic setting where everyone feels a responsibility to contribute" (Tierney, 1994, p. 29). This feeling of responsibility can easily occur when educators create a climate of openness and intellectual rigor and recognize the value of each individual voice (Tierney, 1994). In summary, bell hooks and constructivist educators encourage collaboration, the negotiation of meaning, and the search for understanding, in which multiple perspectives are respected and incorporated into collective meaning construction.

### **Designing the online course template**

Historically, course templates have been used to assist faculty in online course design as they allow instructors to focus on tailoring a pre-existing course to meet their educational goals rather than forcing faculty to start from scratch (Johnson-Curiskis, 2006; Newberry & Logofatu, 2008). The goal in developing this course template was to create a high-quality online course, developed by a team of faculty and Instructional designers, and make it accessible to other faculty and administrators, and subsequently increase the number of faculty and students using technology in and outside the classroom. The course selected was Introduction to Psychology, a course that all psychology majors are required to complete before graduation. The course template was designed to serve as a model for future online courses in its application of pedagogical theory and reliance upon learning objectives to structure the content, learning activities, and assessments for the course. However, faculty are afforded the flexibility to personalize the course by including personally selected discussions, exercises and activities, special assignments, media files, additional readings, and other features. Producing the course template allows all faculty members the opportunity to teach from a well-designed website without needing to build a course from scratch and also provides students with some uniformity in the structure of the course.

#### *Assessing the perceived need for a course template*

The design team surveyed ten full time and adjunct faculty members at an open-enrollment, urban four-year university who were teaching Introduction to Psychology to determine their interest in using a course template and to determine what types of technology applications they were most interested in adding to their current course. Faculty responded as either being interested or not interested in using the following tools. (See Figure 1).

Results demonstrated that faculty members were interested in using a course template to supplement their traditional courses or to transition traditional face-to-face courses to hybrid or fully online courses. The feedback provided by instructors was used in the development of the course template.

The template developers condensed the content of three commonly used textbooks and presented the material using a generic format that could be used with any Introduction to Psychology text. Next, they opted to create learning modules in Blackboard Vista, a course management system, for each chapter to house the course content and link all learning outcomes, assignments, discussions, media, and assessments directly to the chapter content. Swan's (2005) vision of constructivism guided the creation of the course template.

The course template provides instructors with the opportunity to allow students to review various activities for each chapter. For example, the Learning Module tool (see Figure 2) presents course content in a directional and cohesive way for each chapter and includes: lecture notes, assessments, Web-links, discussions, and assignments. The purpose of the learning module is to provide consistency in content presentation, enabling students to move seamlessly from one chapter to the next. For the purpose of this course template, the authors organized the modules to first focus on the chapter learning objectives and link those to the chapter activities. Second, the chapter summary and outline are provided for students highlighting key terms and important content. Third, Power Point slides are included for a visual learning aid. Fourth, several graded assignments and discussion topics are provided for students' selection. Fifth, a series of media is presented to allow for concrete experiences with the chapter content. Finally, a quiz is provided for each chapter to allow students to self-assess their understanding of the material.

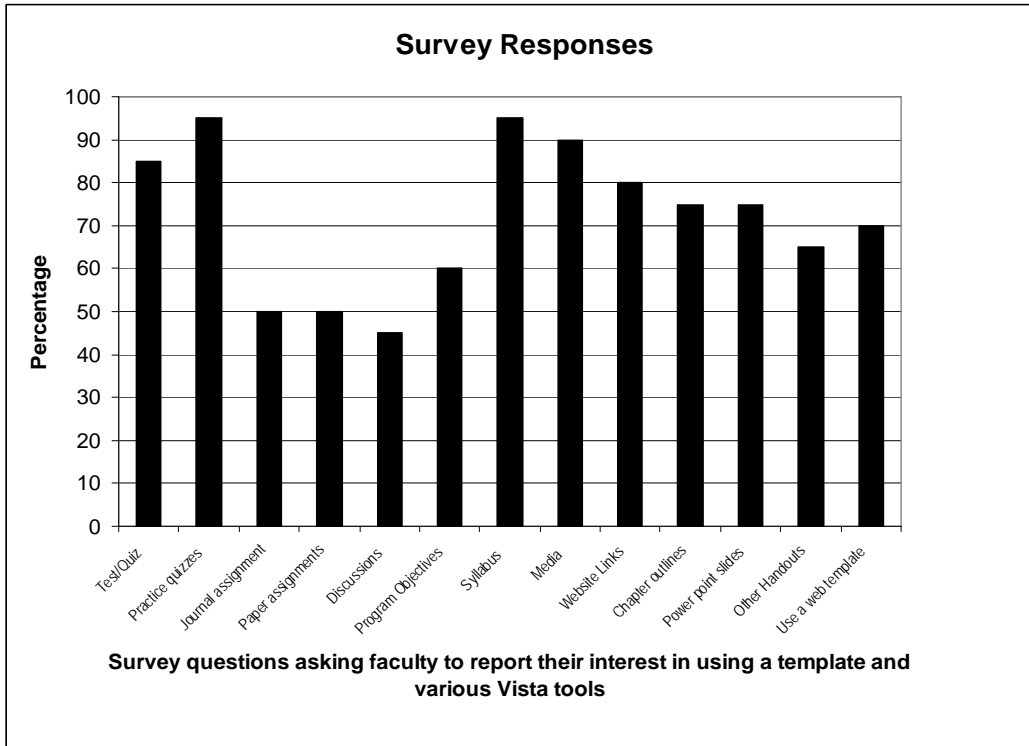


Figure 1. Faculty Survey of Interest in Using a Course Template

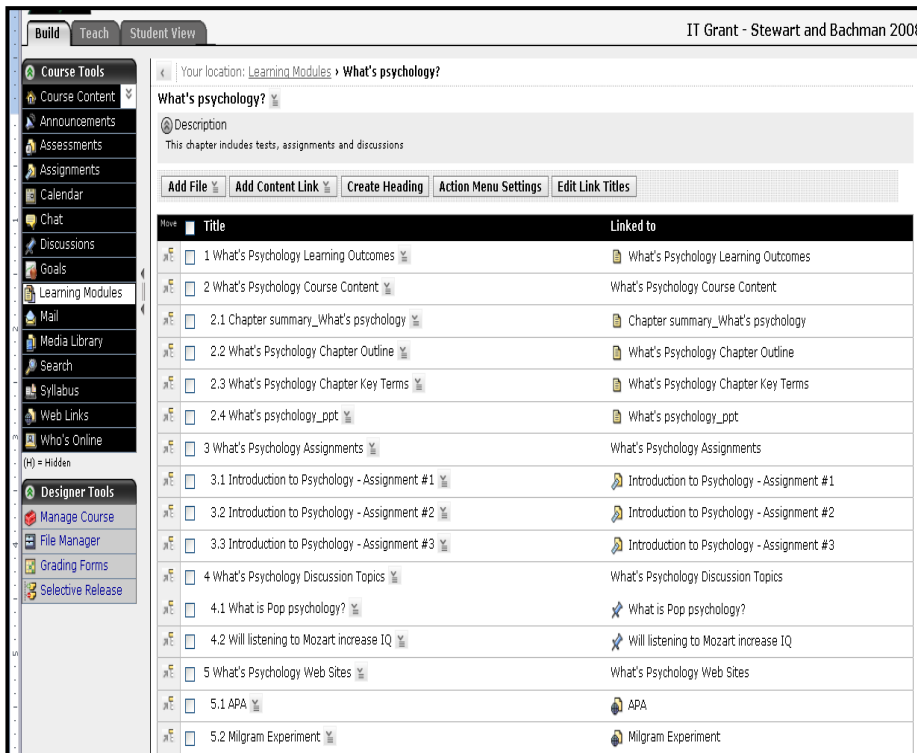


Figure 2. Top Portion of a Learning Module

Instructors can choose to limit the amount of information provided in the learning module or add content, as they see fit. The template provides options for instructors and, if the instructor wishes, for students as well. There are several assignments, discussions, free writes, and journal topics for each chapter. Detailed instructions for activating or hiding course content are provided to all instructors who utilize the course template.

#### *Creating learner-centered learning environments*

The term learner centered refers to “environments that pay careful attention to the knowledge, skills, attitudes, and beliefs that learners bring to the educational setting” (Bransford et al., 2000, pg. 121). Learner-centered teaching builds on students’ cultural beliefs and personal experiences (everyday knowledge), which serve as the foundation for future learning (scientific knowledge). It requires the professor to create learning situations for students that produce cognitive disequilibrium and facilitate new understandings about that particular topic. Faculty need to be sensitive to learners’ previous knowledge states and attempt to remedy errors and misconceptions by encouraging students to engage in metacognition and self-regulation (Ernest, 1995).

Students enrolled in Introduction to Psychology courses often have misconceptions about human behavior and the practice of psychology. One of the goals in the development of the course template was to create well-designed, asynchronous discussion topics that posed challenges to students’ understandings about human thought and behavior. Students are provided with a description of ‘netiquette’ for posting and responding to discussion posts. They are expected to be respectful of their classmates’ ideas and experiences. Research has found online discussion to be more equitable, democratic, reflective, and personal than traditional face-to-face discussions (Eastmond, 1995; Garrison, 2003; Gunawardena & Zittle, 1997; Harasim, 1990; Hiltz, 1994; Poole, 2000; Walther, 1994). Students are encouraged to share their personal knowledge and experiences related to the topic, but are required to cite the text and outside research to either lend support to or refute their statements. Each student must post an original response to the assigned topic and reply to another student’s post. They are encouraged to dispute one another’s claims, but they must do so with supportive evidence.

Emphasis was placed on creating several real-world discussion topics for each chapter in the text. Students have the opportunity to select the discussion topic they would like to complete for each chapter. Providing students with choices in discussion topics promotes the creation of shared understanding in that students are supported in the process of scientific concepts (i.e., academic knowledge) arising from everyday concepts (i.e., previous experiential knowledge). Further, this affords each student the opportunity to bring their unique experiences and beliefs into the transmission of information (see Figure 3 for a sample discussion topic).

After posting a response to a discussion topic and a reply to another student’s post, students are encouraged to re-evaluate their own posts based on feedback from both fellow classmates and the professor, and based upon the assessment scale provided to them in the course template. This evaluative process provides students with the opportunity to see how their work compares to others in the class and should serve to challenge them to excel on future posts. It also provides students with a measure of improvement throughout the semester. Faculty members are also encouraged to participate in discussions to provide a scaffold for students and to serve as models for how students should relate everyday and scientific concepts.

#### *Creating knowledge-centered learning environments*

Shank (1998) reminds course developers that information and knowledge are not synonymous. Online learning environments and the Internet provide students with endless access to information; however, knowledge construction requires more than mere access to data, it also requires the meaningful combinations and presentation of information. The constructivist approach focuses on the structure in which information is provided and the types of activities assigned that enable students to construct robust understandings (Bransford et. al, 2000). Greeno (1991) finds curriculum analogous to ‘learning a landscape’ in that the learner should be able to see how individual pieces of course content are linked to the larger course framework and structure (pg. 175).

Implementing Greeno’s (1991) “landscape learning” metaphor, the authors structured the course template using Learning Modules for each chapter in the text, as depicted in Figure 2. The organization

of the learning modules mimics knowledge structures in that they are organizational structures that contain content-related information. Each learning module is framed using chapter learning objectives, which are linked to assignments, discussions, and assessments. By making the relationships between the chapter learning objectives and assessments and activities explicit, students are able to see the relevance of those learning activities, thereby increasing the likelihood of participation and overall student success.

The learning modules house course content that encourages analogous cognitive activity through the use of various formats of data presentation. The concepts for each chapter are embedded within outlines, summaries, Power Point slides, journal activities, free writes, discussion topics, websites that provide opportunities to solve problems or engage with the material through the completion of surveys or streamed video, and chapter assessments. The chapter concepts are integrated into diverse course materials and students are able to visit and revisit this material at times of their own choosing. This structure is replicated in each chapter learning module and provides students with a sense of familiarity in the website landscape.

The screenshot displays a course management system interface with a sidebar on the left and a main content area on the right. The sidebar includes navigation options such as 'Course Tools', 'Course Content', 'Announcements', 'Assessments', 'Assignments', 'Calendar', 'Chat', 'Discussions', 'Goals', 'Learning Modules', 'Mail', 'Media Library', 'Search', 'Syllabus', 'Web Links', and 'Who's Online'. The main content area is titled 'IT Grant - Stewart and Bachman 2008' and lists discussion topics for four chapters: Neuroscience/biopsychology, Sensation and Perception, Personality, and Science of Psychology/Research Methods in Psychology. Each topic includes a title, a brief description, and a 'Messages' count.

Chapter	Discussion Topic	Messages
Neuroscience/biopsychology	Shaken baby syndrome?	0
	Parkinson	0
Sensation and Perception	Optical illusions - Discussion #1	0
	Sensation & Perception - Discussion #2	0
Personality	Freud, Sex and Vienna	0
	Do you believe in your horoscope?	0
Science of Psychology/Research Methods in Psychology	What is important to think about when we conduct a research study?	0
	Are little girls aggressive?	0

Figure 3. Sample Discussion Topics for Introduction and Learning Chapters.

### Creating assessment-centered learning environments

Constructivist approaches emphasize the importance of providing ongoing feedback and assessment to learners (Bransford et. al, 2000). According to constructivists, learning results from students' reflections on feedback from their interactions with the environment (Swan, 2000). Reflection should yield the reconstruction of knowledge and the opportunity for understanding to evolve. Bransford and colleagues (2000) describe two types of assessment: formative and summative assessments. Formative assessments are feedback provided on works-in-progress such as a draft of a paper or commentary on a discussion posting. Summative assessments are feedback about students' mastery of concepts and course material; this type of assessment might include an essay comparing and contrasting two theories or a multiple choice exam evaluating the understanding of key terms from the chapter. Both types of assessment were included in the current course template.

Formative assessments were designed to be provided by multiple agents: classmates, professor, and self. Students are encouraged to evaluate one another's discussion posts using a five-point scale

ranging from excellent to poor. Peer assessment allows students to challenge one another's growth and development, and the feedback should serve to motivate students to improve their performance over time. Professor feedback on formative assessments comes from the evaluation of journal activities, written assignments, free writes, and discussion and reply posts to the discussion board. Students are provided with a grading rubric for all written assignments, including discussions, so that grading criteria are made explicit to students before they submit evaluative work. The grading rubrics provide assessments of content understanding and the ability to think critically about the material. Research has shown that online students learn better from personal feedback tailored to their educational needs, especially when understanding involves the application of knowledge (Albertelli, Bauer, Kashy, & Thoennesen, 2003), such as in the case of written samples or discussion posts. Self-evaluation should occur as the student reflects on the commentary provided by the professor and his/her peers. Since assignments and discussions are saved over the course of the semester, students are able to examine their progress over the term and assess their improvement, thereby developing a sense of competence.

Each chapter learning module includes summative assessments. The assessments are automated, computer-based tests that provide instantaneous feedback. This type of assessment is desirable to students because most online students expect a much faster turn around on graded assignments than do traditional students in face-to-face classes (Riccomini, 2002). These assessments measure their understanding of key terms and concepts covered in the chapter. The chapter assessments consist of hand-picked items from a test bank that were re-worded to assess the learning outcomes for each chapter. Students can take the assessment multiple times to experience improved performance with increased effort. These assessments are easy to manage and can be easily modified.

#### *Creating community-centered learning environments*

Constructivists posit that learning is a social activity rooted within communities and cultures. Community-centered course design involves creating a sense of relatedness between the online classroom and the larger community. This method of learning creates opportunities for students to engage with others and "to learn, collaborate, reflect, debate, critique, expound, share, give feedback, question, answer, and engage in various other communicative behaviors" (Bannan-Ritland, Bragg, & Collins, n.d.). Research demonstrates that faculty have been successful in creating a sense of community in the online classroom and that online students are equipped with the skills to develop text-based modes of communication that rival traditional forms of engagement in the classroom (Garrison, 2003; Poole, 2000; Rourke, Anderson, Garrison, & Archer, 2001; Swan, 2002a; Swan, 2002b).

The course template creates a community of learners through asynchronous communication via the mail and discussion tools. Students are held accountable on the discussion board to construct a shared understanding. Each student's post should provide some new piece of information and should be supported by everyday and scientific concepts. Students who merely replicate the post of another classmate, without providing new, stimulating information, are not given full credit for their post and receive poor ratings from their classmates. As a member of the learning community, both the students and the professor alike are responsible for negotiating meaning and searching for new understandings. Students' participation is not only valuable, it is essential for the construction of knowledge.

Mail is another tool used to establish relationships among students and the professor. Students are encouraged to solve problems via e-mail and answer one another's concerns before contacting the professor. Oftentimes, students are capable of "doing most of the work," a strategy found to be effective for online educators (Pelz, 2004).

Students are connected to the larger culture and community through the completion of authentic tasks. Authentic tasks are those tasks that have real world relevance and require the student to examine the task from multiple viewpoints (Herrington, Reeves, & Oliver, 2006). These types of tasks are found to be beneficial for students, especially online learners (Lebow & Wager, 1994). Authentic tasks are related to students' interests and are sensitive to their cultural beliefs and varying life experiences. They necessitate students to use a variety of resources to solve real world problems, to reflect on that information, and complete the task over several days, which allows for further reflection before the final work product is submitted. The course template assignments, free writes and discussion topics were developed to be authentic tasks. They require students to explicate their everyday knowledge, to gather scientific knowledge, to read about their peers' perspectives and opinions, and to reconstitute their

understandings of the topic. The assignments are created to challenge students' assumptions about human thought and behavior and to integrate scientific knowledge into both understanding and solving the problem.

### Summary and Discussion

Ideally, community-centered learning should involve learner centeredness, knowledge centeredness, and assessment centeredness. The course template accomplishes this through: 1) the built-in sensitivity to individual differences in everyday knowledge; 2) the reliance upon those differences to construct knowledge; and 3) through the shared responsibility of the community to participate in providing feedback in the construction of shared knowledge.

To date, 70% of Introduction to Psychology professors and approximately 400 students are using the course template. Faculty members and students who have used the website to enhance face-to-face courses or in hybrid courses have consistently provided positive feedback about the organization, content, and learning activities available. The course template has been used University-wide as a "best practices" example of website development. In addition, thirty students completed a questionnaire online assessing their satisfaction with the course template. Items ranged from 1 (strongly disagree) to 4 (strongly agree). Students were given the option to answer "not applicable." Fifty-four percent of respondents reported no or very little previous experience with Web-enhanced courses. Yet, at the end of the semester, all students reported feeling either comfortable or very comfortable with using Vista tools. The majority of students agreed or strongly agreed with regards to items evaluating the course template.

Table 1. *Sample Demographics*

Introduction to Psychology – Fall 2008		
Males		14
Females		16
Age	Mean/SD	23.17 (6.9)
Ethnicity	Caucasian/White	3
	African American	13
	Latino/Hispanic	12
	Asian	1
	Other	2

Table 2. *Percentages of Agree to Strongly Agree*

Survey Items	Agree to Strongly agree
Enjoyed the course format	89%
The course was well organized	67%
Online lecture notes were helpful	73%
Online discussions were helpful	97%
Using technology was helpful to my learning experience	86%
I will recommend this course to other students	70%

The course template successfully introduces first-year college students to an online learning environment. Additionally, the template provides professors with abundant possibilities for unique presentation of the course material. By using the Constructivist approach, students were able to adjust their mental models to accommodate new experiences. In this context, the learning environment was created to encourage students to reflect on their life experiences to construct a shared understanding of the course content. As posited by the constructivist approach, students are more likely to learn when they can generate their own 'rules' and 'mental models,' which they can then use to make sense of what is happening in the classroom.

While the course template was well received by students and faculty, little is known about the relationship between learner characteristics and online learning environments. To truly develop a learner-centered online learning environment more research must be done to examine what content should be presented, how that content is best presented, what learning activities should be offered, and in what combinations should the information be presented to yield the best online learning environment. Mason (1994) suggests that technology is not the crux of the problem; rather, identifying the most effective psychological and pedagogical strategies represents the core of a successful online learning environment.

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