

Contribution-Oriented Pedagogy

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INTRODUCTION

Pedagogy can be described as the art or science of teaching. The question of appropriate pedagogies for distance and computer-based learning when a human teacher may or may not be involved in the teaching process has been addressed and responded to in many ways. After a brief review of different pedagogical models, a contribution-oriented pedagogical approach in which students find, create, submit, and/or share resources using a Web-based course-support environment is identified as a model that is particularly valuable for forms of distance and computer-based learning. Examples of the model in practice, issues with managing the model, and future trends related to the model are also discussed.

BACKGROUND

A pedagogical approach requires an underlying learning philosophy and a general strategy for implementation—the instructional strategy. It also involves specific ideas for the realization of practice requirements and implications for the teacher—what Europeans call the “didactics.” There are many learning theories and instructional strategies that can form a basis for a pedagogical approach (see for example, <http://tip.psychology.org/theories.html> and http://www.emtech.net/learning_theories.htm). The traditional underlying learning model in distance education has been one of knowledge acquisition via an instructivist philosophy. This involves stressing the importance of objectives that exist separately from the learner. Instruction is designed to relate each of the objectives in sequence, and thus learners are the recipients of predetermined material (Reeves & Reeves, 1997). Pedagogies relating to an instructive philosophy emphasize what the teacher (or course-

design team) will do, present, provide, and assess (Gagne & Briggs, 1974). The responsibility of course-design teams for distance and computer-based learning based on an instructivist philosophy is to prepare, in advance, high-quality materials “usually in the form of a narrative, where learners are led through a learning sequence by a well-choreographed story” (Oliver & Herrington, 2003, p. 154).

There are alternative learning philosophies that either differ from a knowledge-acquisition approach or can exist as complements to it. A typical example is constructivism. Constructivist theories stress the need for an active construction of meaning in order for learning to occur. Constructivist principles include active learning, goal setting and self-direction, authentic learning, articulation, collaboration, intentional learning, social interaction, collective knowledge sharing, and metacognitive processes such as reflection (Oliver & McLoughlin, 1999). An important aspect of a constructivist pedagogy is generative learning activities. Students, through their learning activities, generate something, which they use to “test their ideas with each other...becoming active investigators, seekers, and problem solvers” (Grabinger, Dunlap, & Duffield, 1997, p. 10). Teachers are facilitators of these generation processes rather than presenters of knowledge. Pedagogical strategies related to constructivist theories include “student-centered approaches,” problem-based learning, and experiential learning (Hirumi, 2002). A distinction can be made between constructivist activities where the cases and problems that students encounter are prestructured, and constructionist where students design and construct their own materials (Jonassen, Myers, & McKillop, 1996).

Sfard (1998), in contrast, does not use the terms constructivism or constructionism, but instead focuses on learning as becoming a member of a community of practice, learning from the community

Table 1. Comparing the acquisition and participation models (Collis & Moonen, 2001, p. 22; summarized from Sfard, 1998, pp. 5-7)

	Acquisition	Participation
Key definition of learning	Learning as knowledge acquisition and concept development; having obtained knowledge and made it one's own; individualized	Learning as participation; the process of becoming a member of a community; "the ability to communicate in the language of this community and act according to its norms" (p. 6); "the permanence of having gives way to the constant flux of doing" (p. 6)
Key words	Knowledge, concept, misconception, meaning, fact, contents, acquisition, construction, internalization, transmission, attainment, accumulation,	Apprenticeship, situatedness, contextuality, cultural embeddedness, discourse, communication, social constructivism, cooperative learning
Stress on	"The individual mind and what goes into it" (p. 6); the "inward movement of knowledge" (p. 6)	"The evolving bonds between the individual and others" (p. 6); "the dialectic nature of the learning interaction: The whole and the parts affect and inform each other" (p. 6)
Ideal	Individualized learning	Mutuality, community building
Role of instructor	Delivering, conveying, facilitating, clarifying	Facilitator, mentor, "Expert participant, preserver of practice/discourse" (p. 7)
Nature of knowing	Having, possessing	Belonging, participating, communicating

but also contributing to it, which she calls a participation model of learning. She contrasts the acquisition and participation models of learning and argues that both are necessary (see Table 1).

A contribution-oriented pedagogy is an approach focusing on a practical application of the participation model as described in Table 1. It is to be interpreted as an essential complement to existing instructionist approaches that relate to the acquisition model. In the contribution approach, participation is not enough; the learner must also contribute to make a difference. Acquisition and participation are not new ideas, but contribution is less discussed as a pedagogical strategy. Sometimes the terms generative learning and generative projects are used as synonyms for contribution orientation. Shneiderman (1998), for example, talks of a "relate-create-donate" teaching and learning philosophy appropriate for computer-supported learning. Working collaboratively, learners relate to each other, create or develop projects or products that are meaningful to someone outside of the classroom or course, and then donate their results to the authentic user groups.

Shneiderman's approach is thus also an example of a contribution-oriented pedagogy.

ASPECTS OF A CONTRIBUTION-ORIENTED PEDAGOGY

The contribution-oriented pedagogy leads to different sorts of learning activities, different methods of student assessment, and different uses of computer technology than does an instructivist approach.

General Characteristics and Benefits

Some of the main characteristics of a contribution-oriented pedagogy are as follow.

Key Ideas

Learners contribute to the learning materials via contributions made available to others in a Web-based system. The others may be others in the same

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