

Carving a New Path for Distance Education Research

by David P. Diaz

For many years, researchers have endeavored to determine whether distance education can provide the same level of academic excellence as courses taught in traditional modes. Moore and Thompson (1990, 1997) reviewed much of the research from the 1980s and 1990s and concluded that distance education was considered effective "when effectiveness [was] measured by the achievement of learning, by the attitudes of students and teachers, and by return on investment" (1997, p. 59). They also noted, however, that many research studies demonstrated weak designs, "specifically in regard to control of the populations being compared or otherwise studied, the treatments being given, and the statistical techniques being applied" (1997, p. 59). Phipps and Merisotis (1999) suggested that design flaws in distance education research have made the results inconclusive. Others, unconvinced of the purported defects of distance studies, suggest that perhaps distance education research has unjustly faced a higher burden of proof than other scientific and educational research projects (Brown & Wack, 1999).



A large portion of distance education research has been devoted to comparative studies of distance and traditional methods of education. In this research, the teaching modality (traditional or distance) is considered the independent variable, and the studies compare distance education with traditional teaching with respect to student success (reflected in course grades, test scores, attrition, etc.). Researchers conducting comparative research often ask the same basic research question: "Is distance education as good as, or better than, traditional education?" This type of question is premised on the implicit yet rarely mentioned assumption that "traditional" education is the ideal mode of educational delivery and thus can serve as the "gold standard" against which all other forms of "alternative" education should be measured. This assumption is untenable simply because there is no way to determine that one class method is better than another without first agreeing on the criteria for such a determination.

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Another problem with comparative research is that it rarely defines what it means by "traditional" (or even "distance") education. Saba (1998, p. 3) pointed out that "[Comparative studies] fail to adequately define 'traditional' education or present a sufficient differentiation between traditional education and [computer] mediated education." Ehrmann (1995) added that unless the processes being compared are explicitly defined, comparisons between distance and traditional modes of instruction cannot be justified. This distinction is important to research validity because outcomes may differ substantively across disciplines, courses, and teachers. That is, there is likely to be too much variation, both within and across disciplines, courses, and/or individual teachers, to make valid comparisons between distance and traditional classes.

Brown and Wack (1999) suggested that it is difficult to acquire clear, compelling evidence regarding the impact of technology on student learning outcomes. They noted that studies attempting to provide this evidence are usually based on the assumption that "such 'compelling' evidence is attainable, and second, that even amid 'dizzying' technological change and shifting student populations such comparisons with conventional education are relevant." Ehrmann pointed out that by specifically defining what "traditional" or "distance" means (i.e., what materials, motives, or methods are employed), "you limit your study to a very small and temporary universe" (p. 21). In other words, when educational modalities are framed within their unique contexts, the conclusions justified by the

research are also limited.

Some researchers have implied that research designs other than true experimental approaches (e.g., evaluative or descriptive research, or those without random samples) are weak and inconclusive with respect to the efficacy of distance modalities. Phipps and Merisotis (1999, p. 20), in a sweeping critique of distance education studies, noted that "most of the studies do not use randomly selected subjects." They concluded that these studies run the risk of allowing multiple variables to confound study results. The problem with this type of critique is that random selection is not practical. The reality of enrollment patterns is that students will self-select into courses based on reasons important to them, such as preferences for certain teachers, or locations, or personal schedules. Randomizing subjects in a distance study may increase generalizability in theory, but in practice many of the findings are not likely to be useful, unless one assumes that students who are randomly assigned are representative of those who self-select into a course.

Saba (1998) and Ehrmann (1995) have suggested that many studies are simply asking the wrong research questions. Saba recommended that research hypotheses focus on whether educational strategies are successfully engaging students and on whether or not there is sufficient communication and interaction between instructor and student to promote the construction of knowledge.

The Role of Learning Theory in Distance Education Research Design

It is my hypothesis that the focus of current distance education research has been implicitly, and perhaps unknowingly, framed within the apparent dichotomy between teacher- and learner-centered theories of learning. In other words, I believe that the design of much of current distance education research is based on the preferred learning theory of the distance researcher.

Traditional, teacher-centered, "instructivist" learning theory reinforces the view that knowledge is attained passively by information transfer from a knowledgeable authority figure (teacher) to the learner. Knowledge (reality) exists independent of, and external to, the learner. This concept of learning leads quite naturally to a lecture format, a "black and white" view of knowledge, and a passive learning perspective (Gardiner, 1998). In the instructivist view of learning, the teacher controls the learning process through the distribution of knowledge. This approach clearly places the emphasis for learning on the *method of dispensing* information rather than on facilitating learning through matching learning activities to student learning preferences.

Many educators still have difficulty shedding the protective cloak of their traditional instructivist training. Teachers often teach as they have been taught (Gardiner, 1998). Since the instructivist learning theory has prevailed for quite some time, many instructors have used a teacher-centered approach in the classroom (between 70% and 90% of professors still use the traditional lecture as their instructional strategy of choice), and most current research tacitly approves an instructivist worldview. This may also explain why traditional students exhibit strongly dependent (passive) learning styles (Grasha, 1996; Diaz and Cartnal, 1999).

At the present time, the adult learning theory paradigm has shifted from a teaching focus to a learning focus (Berge and Collins, 1995; Schuyler, 1997). The "constructivist" learning perspective asserts that the learner constructs new knowledge through a process of relating new information to prior knowledge and experience (Olgren, 1998). Working under the constructivist approach, teachers become guides rather than dispensers of knowledge, and instructional practice places importance on the role of the student in constructing knowledge. Thus, geographical distance becomes irrelevant, and technology (i.e., mode of delivery) is only important to the extent that it facilitates communication and construction of knowledge (Saba, 1998).

Over four hundred studies have attempted to find out whether distance education differs from traditional modes of instruction when it comes to facilitating student success. The **No Significant Difference Phenomenon Web site** contains references from the 1920s to the 1990s. This "significant difference" research has been equivocal since the majority of studies reported no significant differences between the distance and traditional modalities. Importantly, the design of this type of research (whether comparative or evaluative) clearly places emphasis on the importance of the method of delivering instruction and is consistent with the instructivist (instructor-centered) learning theory but inconsistent with the constructivist (learner-centered) theory, which is more concerned with the role of the student in learning than with the role of the instructor in teaching. Along with the lingering popularity of the lecture format in teaching, the preponderance of "significant difference" research should be ample evidence that an instructivist world view has continued to prevail in the classroom and in research design. As constructivist researchers begin to understand the implications of constructivist assumptions, they will see that the role of the modality in facilitating learning is not as important as the quality of the relationships (e.g., student-student interaction). If students assume a critical role in

the learning process, the research focus should be on individual students and the characteristics that make them successful in different modalities. Such characteristics might include motivation, computer expertise, learning styles, or the quality of student-student or student-teacher interactions, to name just a few.

The tide of learning theory has been shifting from an instructivist to a constructivist perspective. This evolution has changed educational assumptions and has called into question the methods of traditional distance education research. To some, the proposed dichotomy between instructivism and constructivism may seem an oversimplification of learning theory. It is still important, however, to understand how underlying philosophies of education influence not only educational practice but also educational research. The extent to which teachers see themselves as "instructivist" or "constructivist" may implicitly determine the extent to which classroom activities are based on teacher or student preferences, and may also influence the focus of research design.

Implications

Educational researchers, in order to help determine the future of distance education, should focus on student success rather than on teaching modalities. Studies that focus on comparing student characteristics, evaluating overall student success, and profiling successful (and non-successful) students might better help us attain that which we all seek: more successful students. Research questions should change from "Which method is better?" to "What student characteristics facilitate success within a particular modality?" and "Can certain characteristics be altered to improve student success?"

Thompson (1998) has noted that the dynamic nature of the individual learner and the field of distance education as a whole makes it unlikely that we can establish a "generic" profile of the distance learner in higher education. Tony Grasha's (1996) research suggested that student learning styles are in a continual state of flux, changing significantly from year to year and even from the beginning of the term to the end. Diaz and Cartnal (1999) confirmed Grasha's research and demonstrated that online students display widely differing learning style profiles and other characteristics.

Since student characteristics are in constant flux, the usual requirements for broad generalization in research may need to be abandoned in favor of a model that continuously monitors student characteristics and determines which characteristics facilitate favorable outcomes. This student- and learning-centered approach to research would likely influence educational practice by increasing faculty sensitivity to the individual learner and by preparing them to facilitate distant education. Future studies should entertain new research questions that focus on student success rather than distance modalities.

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