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# Quality in Distance Education

*Focus on On-Line Learning*

**Katrina A. Meyer**

*ASHE-ERIC Higher Education Report: Volume 29, Number 4*  
*Adrianna J. Kezar, Series Editor*

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# Executive Summary

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Writings about Web-based learning are fraught with misunderstandings, misperceptions, and mistakes. Undertaking this project has been an eye-opener for me, and reading this report will likely be a surprise to the reader as well. The main questions below express most of these misperceptions—and hard-earned insights.

## Does the Research Reviewed Apply Only to Distance Education?

This monograph focuses on the research concerning on-line learning, and although it makes some mention of other modes of distance education, it is oriented toward exploring the specific intricacies of learning over the Web. *Distance education* is a broader term, comprising several different delivery modes. *On-line* or *Web-based* distance education is use of the Web to deliver education whether at a distance or next door, although the Web may also be used to enhance on-campus courses in particular ways. Most of the research reviewed may actually be quite interesting and useful to faculty incorporating the Web in their regular classes. And because the line between Web-based learning at a distance and in an on-campus course is murky at best, research on campus-based uses of the Web is also included in the review.

Focusing on on-line education should not be construed as an attempt to ignore some of the fine work of early distance education theorists and researchers. In many cases, this work holds up quite well and can be

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constructively applied to on-line learning. Many good reviews of this earlier research exist (Gibson, 1990; Moore and Thompson, 1997), but they are beyond the purview of the current monograph, which focuses on on-line learning.

## **But There Isn't Much Research on Using the Web, Is There?**

I had been operating under two misconceptions, which have been duly erased. I thought there would not be much research on on-line learning: I was not only wrong but gravely wrong. I found numerous papers (not included in this review, as they do not describe a research study) where faculty discussed their personal experiences with on-line learning and generated thoughtful and useful insights into how best to use the medium. Literally hundreds of studies had been peer reviewed and published in on-line journals or posted on conference Web sites. Many faculty in Canada, Australia, England, and the United States have been busy conducting their own research into on-line learning, using some very innovative approaches or more classic experimental designs.

I also thought I would need to rely on the research literature in other domains (e.g., cognitive science) but had to do so less than expected. I was also wrong in thinking that the research might still be focused on such outcomes as student achievement without looking at the intervening variables (in the student, the environment, even the instructional design) that might explain the outcome. I saw some of these types of studies, although we need more.

## **But Aren't These Studies Poorly Done?**

The perception is that most studies done on distance education or the use of technology are poorly designed and prone to incomplete analyses. That certainly is true of the simple comparison study, where student outcomes (such as course grades) for an on-line course are compared with a traditional course. It is the source of the "no significant differences" phenomenon, where possible intervening forces are ignored and the researcher and instructor are the

same person, further muddying the results. No one would argue that this design is flawed and the results questionable. And I would be happy if I never saw another such study published anywhere.

Some very good studies are out there, however—some of them quantitative and others qualitative and still others a thoughtful or theoretical analysis of what is going on in an on-line course. Some of these studies are quite creative and use interesting approaches to analyze the on-line course or the student learning resulting from using the Web in a course, e.g., applying critical analyses to student understanding implied in his or her contributions to threaded discussions. Many of these studies would pass the harshest peer review criteria, and others are less complicated but no less worth reading. Even though we may value multivariate, controlled-environment research, it is sometimes the serious and balanced personal voice of the writer sharing his or her insights that may influence other faculty members to try the new medium or improve their use of it as an instructional tool.

## **Will We Ever Have a Definitive Answer on the Quality of On-Line Learning?**

It is unlikely we will ever unravel all the factors that impact on-line learning. It is complex and its elements (the technology and the students) keep changing. Because we have not achieved a definitive answer on quality for more traditional classroom situations, perhaps it is unwise to expect such clarity for on-line learning. But more understanding is always better than less, so the search for clarity will (and should) continue.

I remain a supporter of on-line learning and think it holds great promise for students who wish or need to learn this way. It forces faculty and institutions to question assumptions and renew their attention to student learning. No student of technology can pretend that any technology is always and unfailingly positive, however, and I urge others to undertake some of the longitudinal and careful studies of this learning to see whether the Web may have some secondary or tertiary impacts—the unintended consequences technology is famous for—that we cannot see at the present. Most technologies are likely to have such impacts, so it is wise to keep a careful eye on what they

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might be. In the meantime, however, having doubts about technology is no reason for keeping it away from students, for they may be better able to identify what the problems may be and excuse themselves when they feel it is right to do so.

## **What Might Be the Most Important Lesson to Take from This Review?**

Probably because so much of the earlier research on distance education was the simple comparison study, results were attributed to the use of technology without any attention to the instructional design of the course or the instructional uses of a most flexible tool, the Web. If there is one lesson I would most like to pound home, it is that one cannot evaluate the use of technology separately from the instructional uses made of it. Smith and Dillon (1999) call it the *media/method confound*, and it is perhaps as clear a term for the interrelationship between technology and instructional design as I have found. In other words, it is not the technology that has an effect, it is the way it is used.

If I could have a second most important lesson, it would be based on the work of Reeves and Nass (1996), who studied the relationship between media and reality. They found that people treat media as though it were real life, which can be attributed to the need and expectation for human relationships, even if you are relating only to a computer. Basic human psychology is the key to unlocking our relationship with the Web, and perhaps it explains why instructional design is so important and why we can create community over a bunch of wires.

And if I could be indulged for a third most important lesson, it would be to urge caution when reading so many opinion pieces on Web-based distance education. As may soon become clear, the researcher's biases can wend their way into the research design and the interpretation of the results, leaving the reader wondering about the true worth of the study. Be a critical reader; although there is nothing wrong with advocacy, beware of advocacy disguised as research.

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## So How Would You Define Quality?

Although Chapter Five gives several examples of measures for quality Web-based learning, I would recommend focusing predominantly on student learning and augment it with those variables that contribute to learning. Quality learning is largely the result of ample interaction with the faculty, other students, and content. Because the Web enables interaction, it provides an opportunity for faculty to construct collaborative projects for students. A quality course or program would allow for multiple paths to learning, capitalizing on students' different learning styles or intelligences. Quality would also be the result of opportunities for students to construct meaning from experiences, to reflect on meaning, and to test and retest those understandings in new situations. These definitions are not too dissimilar from those of a quality education, so the only difference is that on-line learning uses the Web to make these opportunities available to students in class or at a distance.

And if you do not have the time and resources, focus exclusively on student learning. Student learning is the ultimate reason why higher education exists, and so we need to know how to define, assess, and improve student learning in multiple ways.

## Where Is Research Needed?

As long as you do not undertake a comparison study, there is plenty to do and many answers to seek. If I could promote one of the areas that is most needed, it is finding an answer (or answers) to the question of which technology works with which student and which learning objective in which discipline and why. Let me add a plea for answers to the question about what mix of media (including, of course, face-to-face instruction) works best for which purpose. And because we always need to keep a close eye on the legitimate worries of the technology critics, we must ask whether any evidence exists that the Web is having any deleterious effects or unintended consequences on students or their learning. Undoubtedly, the careful reader will find many more areas for research in this document, and I hope they do so and do so quickly.

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## Are There Some Unforeseen Benefits to Doing Research on the Web?

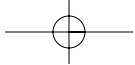
The Web also drastically changed how I conducted this review. I am grateful that so many of the conferences focused on using the Web for teaching in higher education have made it a practice to make individual papers available on-line, and I am grateful as well that so many peer-reviewed journals put their contents on-line. This availability made searching for studies somewhat easier, and it means that you will also find these papers at the Web sites indicated in the reference list. Although several fine journals still publish in print, finding good peer-reviewed papers on-line is both quicker and easier for those of us interested in learning from others' experiences and for the researcher interested in sharing his or her results.

## What About the Connection Between Quality and Cost?

If I have one regret, it is that I could not spend too much time on the quality/cost nexus: the interconnections between raising quality and lowering cost (or improving efficiency). In light of the large number of good studies on quality alone, I chose to focus on those elements that most contribute to quality learning. Van Dusen (2000) provides a good discussion of the interrelationship of cost and quality, and a growing number of studies look at cost and quality, most particularly Twigg's Center for Academic Transformation and the studies on asynchronous learning networks funded by the Sloan Foundation. Obviously, more needs to be done on this topic, but these sources are excellent places to begin a review of the research on whether one can improve quality *and* efficiency at the same time.

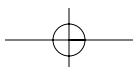
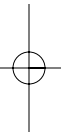
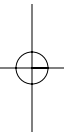
## Is This Report the Definitive Answer?

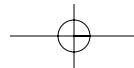
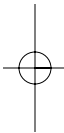
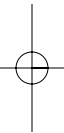
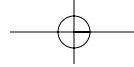
No. Given how rapidly faculty are producing research on Web-based education and how our use of the Web changes from year to year, this document may be out of date in a few years, when another review of the research should



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be undertaken. Or in other words, as researchers continue their study of on-line learning, the results of research included in this review may be superseded by new and better understandings of what works best and why. That is a humbling truth, but at least it ensures that we must stay current or lose our place in the rapid advance of the field. Although using the Web in education is sometimes fraught with problems—downed servers, inadequate ISPs, bug-prone software, and even viruses that are communicated by e-mail—any errors or inadequacies found in this document have an all-too-human source.





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# Foreword

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No topic has received so much attention in the last decade as technology, and possibly no topic is as misunderstood or has received as little attention as distance education. Correspondence and other forms of distance education have been mostly ignored in the higher education research literature. The connection of technology with distance education has opened the door among researchers who typically ignored this large sector of higher education. Issues that are outside the core of institutional practices are often subordinated. In fact, as the author notes, people see distance education not only as subordinate but also at some level a threat to traditional practices of teaching and learning. Therefore, the few articles or books that are written tend to come from a mostly negative ideological orientation. But there appear to be policymakers and administrators who see that distance education is becoming more closely aligned with the core of institutional practice and realize we need unbiased research and information to guide decision making about this misunderstood area of institutional operation. This monograph is revolutionary in its attempts to bring distance education to the forefront of educational dialogues, especially in its basis on research.

Katrina Meyer has spent many years working in policymaking and research related to distance education, and she brings this experience to the development of an authoritative monograph. She is currently an assistant professor of educational leadership at the University of North Dakota, with a special interest in Web-based learning and distance education in higher education institutions. For more than thirteen years, she has worked in administration and policy at the state and institutional levels in distance learning and technology.

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Meyer's willingness to engage in the messy debates about what counts as research, dilemmas in methodology, and contradictory or nonsignificant findings is most impressive. She also takes on the elusive questions related to quality. Perhaps no other topic is so important to higher education but so illusory. Most scholars skirt quality questions and focus on descriptive reports of trends among institutions involved in distance education and other easy, less complex questions. To directly engage quality in distance education and the contradictory findings of research is confusing, convoluted, and fraught with peril—at best! Moreover, new research is conducted regularly, and the topic is a moving target. Meyer's goal is to provide a contingent framework for making decisions based on existing research and normative guidelines. This same framework can be built on for future decision making as new research emerges. Countries worldwide are also seeking to understand and make sense of the confusing research on quality; this monograph should prove useful for these many international discussions as well.

Several ASHE-ERIC monographs focus on related topics. Gerald Van Dusen has written two monographs on issues related to technology and distance education. His most recent monograph, *The Digital Dilemma*, focuses on the problems of access that policymakers and educational leaders need to consider when exploring distance education. His earlier monograph, *The Virtual Campus*, examines the administrative processes, institutional facilitators, and barriers of integrating technology in the classroom. Jeffrey Cantor's *Higher Education Outside the Academy* is a helpful resource on distance education in corporate training and in the for-profit sectors. Trends in this arena are extremely helpful for traditional higher education to observe and learn from, as they are often more advanced in the use of these newer forms of technology. Armed with these resources, educational leaders will have a wealth of information on the most vexing issues—quality, access, implementation—related to distance education.

**Adrianna J. Kezar**  
Series Editor