

# Research and publishing in Distance Education

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## ABSTRACT

This paper reflects on the nature and the quality of research in distance education. In the light of this, it discusses directions for research in distance education and the opportunities and challenges they present. It also looks at how to get this research published in peer-reviewed outlets in the field.

## INTRODUCTION

An overview of the DE literature from the past few decades shows a great deal of attention being focused on 'descriptive' type research, which was work that aimed to describe the DE phenomenon and DE practices. This focus led to some interesting and groundbreaking work on defining the nature of distance education and theorizing about learning and teaching at a distance (see Keegan, 1990). With more experience, both in the practice of DE and its study, there has been growing interest on evaluating the quality of learning and teaching at a distance, and on the influences of various forms of technology in this regard. This research has drawn from what we know about human cognition, learning, and teaching, and about the effects of educational technology including how to go about ascertaining their effects validly and reliably.

Despite these positive developments, research in distance education remains rather weak. Part of this is thought to lie in the multidisciplinary nature of the field, which restricts the emergence of a clearly defined and widely accepted research methodology. Researchers in this field tend to adopt research methods from areas such as education, humanities or the social sciences, and sometimes applied less rigorously than in those disciplines. Several studies prepared by The United States Institute for Higher Education Policy in Washington, DC for The American Federation of Teachers and the National Education Association observed some serious limitations with existing research practices in DE (see for instance, Phipps & Merisotis, April, 1999, <http://www.ihep.com/Pubs/PDF/Difference.pdf>; For other related reports see also <http://www.ihep.com/Publications.php?parm=Pubs/PubLookup.php>).

The report by Phipps and Merisotis (1999) is based upon material that was published during the 1990s. It places particular attention on those types of technologies that are currently being used by the majority of institutions. This report concentrates primarily on an evaluation of all original work including experimental, descriptive, correlation, and case study research. It also summarizes key information and findings of other policy papers, articles, and essays that dominated the literature. The authors of this report concede that while this review of original research does not encompass every study published since 1990, it does capture the most important and salient of these works. From this sample of original research they found that the three broad measures of the effectiveness of distance education usually examined are: *student outcomes such as grades and test scores; student attitudes towards learning through distance education; and student satisfaction toward distance learning.*

## **PROBLEMS WITH DE RESEARCH**

The Phipps and Merisotis report claims that a closer look at this body of research, however, reveals that it may not be prudent to accept their findings at face value because of problems with the methods that were used to reach these findings. It claims that the most significant problem had to do with the overall quality of the research, which pretty much rendered many of the findings inconclusive. They claimed that the findings of the original research must be read with some caution. Similar remarks about distance education research have been articulated by Anglin and Morrison, 2000; Diaz, 2000; Perraton, 2000; and Saba, 2000. Evaluating the quality of any research requires determining if the studies adhered to commonly accepted principles of good research practice. This is essential if the results of the studies are to be considered valid and generalizable. If a study does not abide by these proven principles and practices, the results they derive can be erroneous and misleading. The Phipps and Merisotis report flags the following issues as the shortcomings of the surveyed literature.

- Many of the experimental studies did not use randomly selected subjects.
- Much of the experimental research reviewed did not control for extraneous variables and therefore could not show cause and effect.
- The validity and reliability of the instruments used to measure student outcomes and attitudes were questionable.
- Many of the studies did not adequately control for the feelings and attitudes of the students and faculty.

These are critical concerns and they need serious consideration by researchers in the field, as these issues remain prevalent in much of contemporary distance education research. A large part of the problem with the poor research effort in distance education is due to the poor *match of research question or topic with suitable research methods*.

## RESEARCH DIRECTIONS IN DE

**In the following, I adopt the categories of research methods from the Phipps and Merisotis report to explore opportunities and challenges for research that they present.**

### Research Methods

Selecting the most appropriate method of research and applying it rigorously to the problem or research question that is being investigated comprises the most serious problem with research in distance education and elearning. This is further confounded by various interpretations of what comprises a research method as opposed to research design or types of data such as quantitative and qualitative data. A meaningful way of capturing research methods is with the use of following categories. These are; *case studies, correlation studies, experimental studies, phenomenological studies, research synthesis, and evaluation studies*.

## CASE STUDIES

A case study is an in-depth examination of one organization, one project, or one subject. For a case study, the researcher may use a variety of methods to gather data on the case that is being studied. The description of the case is in narrative form and it may comprise the use of quantitative and qualitative data types. In distance education and elearning, a case study may take the form of a report on how a program is being offered to a particular group of students, how a subject is offered using particular technologies. The problem with much of this type of research is that the bulk of the reports do not go beyond much more than a "dry" and boring description of the delivery technology. They lack any significant focus on any innovative learning design within that context, or a critical analysis of the experiences of stakeholders.

A good case study reports on a single unit or case. As such, it has a character, totality, and a clear boundary. The report reflects some kind of unity in the system, project, or process that it is reporting. Moreover, there is a unique way

of organizing data in the report, which preserves the unitary character of the object or process that is being studied. A case study researcher is seeking patterns, regularity, and commonality in the study. The responsibility for interpretation of case study reports is shared between the researcher and its reader. Observing the same subject from the same point of view by several researchers can validate case studies.

Usefulness: Ideal for describing a unique operation, initiative or program.

## CORRELATION STUDIES

Correlation research involves collecting data in order to determine whether, and to what extent a relationship exists between two or more quantifiable variables. In this form of research, an estimate is provided of just how related two variables are. For instance, if two variables are highly related, a correlation coefficient near +1.00 (or -1.00) will be obtained; and if two variables are not related, a coefficient near .00 will be obtained. One example of a correlation study might be determining the relationship between student satisfaction with an instructor or the type of technology used. It is important to note that correlation research never establishes "cause and effect" it only reveals relationships. Correlation studies fall into the trap quite often of suggesting cause and effect.

**Usefulness:** Ideal for determining how relevant variables operate such as levels of motivation and academic achievement.

## EXPERIMENTAL STUDIES

Experimental research is the only type of research that can truly test hypotheses concerning "cause and effect" relationships. In an experimental study, the researcher manipulates at least one *independent variable* and observes its effects on one or more *dependent variables*. The researcher determines what is being investigated and which group of "subjects" will get which treatment (i.e., the *independent variable*). The groups of subjects in the study are generally referred to as experimental and control groups. Ideally, in experimental research the groups of subjects to be studied are randomly selected before the experiment to eliminate any bias due to sampling. This procedure is not followed in other methods of research.

The essence of experimentation is the concepts of "prediction" and "control". A researcher strives to ensure that the experiences of all the groups of subjects in the study are as equal as possible on all the important variables except the *independent variable*. Such experimental research is very hard to carry out properly in distance education contexts due to the difficulty of controlling for

confounding variables in such "open" settings. Medical research arguably has the strongest tradition of experimental studies for causal assessment. Clinical trials in medical research are grouped into four phases. All four phases are considered essential to scientific assessment of the effects of treatments. Phase I trials are essentially small sample exploratory studies that assess the nature of the intervention, how it is administered, their potential side effects, patient reactions, etc. Phase II trials tend to be correlation studies of safety and effectiveness. Phase III trials are typically the randomized experiments designed for high internal validity. Phase IV trials explore dosage responses, potential (unintended) effects, generalizability issues and new uses for the treatment.

*Usefulness:* Ideal for establishing cause of effect, such as the strength of the influence of nature of feedback on motivation.

### **Phenomenological studies**

These comprise the study of phenomenon (a), which are described as relatively stable, recurrent general features of the world that we seek to explain. The goal of such studies is to adopt an unbiased approach so as to be able to observe and decipher patterns and consistencies that may be emerging from the context that is the subject of study. Most commonly used strategies comprise *phenomenography* and *grounded analysis*.

*Phenomenography* is a technique that has been popularized by Ferenc Marton and his colleagues in the study of students' approaches to studying. It is the empirical study of the limited number of qualitatively different ways in which we experience, conceptualize, understand, perceive and apprehend various phenomena. These differing experiences, and understandings are characterized in terms of categories of descriptions, logically related to each other, and forming hierarchies in relation to given criteria. The dominant method for collecting data in this is the individual interview, which is carried out in a dialogical manner. The interviewee is encouraged to reflect on previous unthematized aspects of the phenomenon in question. The interviews are transcribed verbatim and the analysis is carried out in an iterative manner on those transcripts. Distinctly different ways of experiencing the phenomenon discussed in the interview are the units of analysis and not the single individuals. The categories of description corresponding to those differing understandings and the logical relations that can be established between them constitute the main results of a phenomenographic study (Marton, 1992).

*Grounded analysis* derives its name from the practice of generating knowledge and understanding from ground up, hence the term grounded theory. Formally

introduced by Barney Glaser and Anselm Strauss (1967), this methodology emerged as an alternative strategy to the more traditional approaches to research, which rely heavily on hypothesis testing, and quantitative methods. The general goal of grounded analysis is to construct theories in order to understand phenomena.

**Usefulness:** Ideal for exploring and explaining such things as the nature of unique experiences.

### **Research Synthesis**

This research method refers to attempts at summarizing and synthesizing the results of several independent studies on a topic. The most widely known approach to research synthesis is a meta-analysis. Other forms of research synthesis include narrative reviews and summaries.

Meta-analysis as a form of research synthesis enables the capture of the overall impact of a large number of studies of a particular type that have examined the same question, such as the impacts of PBL on achievement, or the relative impacts of asynchronous and synchronous distance education on learning outcomes. It is a statistical procedure that integrates the results of several independent studies. Well-conducted meta-analysis allows a more objective appraisal of the evidence than traditional narrative reviews. They provide a more precise estimate of a treatment effect.

**Usefulness:** Ideal for ascertaining a reliable overall estimate of effects and influences such as the effects of local tutoring on persistence.

## **EVALUATION STUDIES**

Evaluation studies comprise the systematic acquisition of feedback on the use, worth and impact of some object, program or process in relation to its intended outcomes. The major goal of evaluation studies is to influence decision-making of some sort through the provision of feedback. The most basic distinctions between the various types of evaluation are often drawn between *formative*, *summative*, and *monitoring* or *integrative evaluation*. Evaluation studies are different from research studies in several ways. At the very basic level, research studies are usually undertaken to satisfy the curiosity of an investigator. Evaluation studies on the other hand, seek to study the impacts and outcomes of processes that were designed to contribute to the solution of a practical problem. Both sorts of studies require nevertheless, the same level of rigor. The general tendency in the field has been to collect data from very crudely

developed instruments such as surveys and questionnaires without much thought to what is being evaluated, how and how systematically.

*Usefulness:* Ideal for systematically reporting on the design, development and implementation of a program.

## GETTING YOUR RESEARCH PUBLISHED

**Insisting on methodological rigor in the conduct of your research is extremely important. You will be well on your way to getting your work accepted by your peers if you employed sound methodology in the conduct of your research. The rest of the process is much easier. Let us first deal with what most peer-reviewed journals are looking out for. Papers that are submitted for publication consideration are reviewed by members of an Editorial Board of the journal with expertise in the areas(s) represented by a paper, and/or invited reviewers with special competence in the area(s) covered. In most cases, the editors reserve the right to make minor alterations to all papers that are accepted for publication.**

## CRITICAL ATTRIBUTES OF PUBLISHABLE MATERIAL

- Most journals would be examining your submissions using some variation of the following criteria. Be sure to ask yourself the same questions. Does your article do the following? To what extent are you happy with your own responses to these questions?
- *Contribution to the field.* How would you rate the contribution of your paper to the field? Does it advance ideas in the field or merely replicates existing and accepted viewpoints. Would readers find the information novel, yet easy to implement. Any thing other than significant contribution will not be acceptable to most editors.
- *Quality of ideas, goals, and intentions.* How would you rate the quality of the ideas, goals and intentions of the paper? Anything less than high or moderate will not be acceptable to most editors.
- *Importance of topic to the readers.* How would you rate the importance of the topic of the paper to the readers of the journal? This is most critical. Reviewers will not take lightly to articles that do not fit the goals of their publication. Be sure that you are sending your article to the appropriate journal, or else you will be losing valuable time (several months) in

finding out eventually that your article is not suitable for that publication. Do not forget that, you will have been abusing the privilege of the peer-review process by occupying valuable time of your colleagues. If you do, you run the risk of developing a poor reputation for yourself in the professional community, which can be very damaging to your career.

- *Relevance of ideas to the readers.* How would you rate the relevance of ideas in your paper to the readership? The issue of relevance is closely associated with the subject of importance of the topic, and so the same sorts of cautionary remarks apply here.
- *Methodological rigor in your paper.* How rigorous is the methodology you have employed in your paper? This would include attention to the review of the relevant literature, approach to gathering of data, analysis of that data, and presentation and interpretation of findings, and their discussion.
- *Coherence in the paper including use of language and writing style, presentation of ideas, review of the relevant literature, presentation and interpretation of data, and discussion of the data.* How would you rate the use of language and overall expression and writing style in the paper? Most journal editors and reviewers will find poor use of the language and writing style very irritating. They expect you to get that right, even if there is nothing much else in the paper. So, be sure that your paper reads well, and is clear of any sloppy errors of spelling and grammar.
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**For a person to claim authorship of a publication, he or she should have had substantial participation in the creation of the publication by:**

- Participating in the conception and design of the research to which the publication relates ('relevant research'), or analysis and interpretation of relevant research data; and



- Drafting the article or revising it critically for important intellectual content; and
- Giving final approval of the version to be published.

**Participation solely in the acquisition of funding or the collection of data is not sufficient for a person to be attributed as an author of a publication. General supervision of the research group is not sufficient for authorship either. Other persons who contributed to the work but who are not named as authors should be mentioned in the 'Acknowledgements'. An author must ensure that the work of research students, research assistants, and technical officers is recognized in a publication derived from research to which they have contributed.**

### *Length of articles*

Articles should not exceed 7,000 words and must include a clear and concise abstract of 100 to 150 words. Longer articles may be acceptable for publication consideration after agreement is reached with the Editors. All submissions including abstract, figures, tables, and references must be double-spaced, and typed on one side only with at least one-inch margin on all sides. Contributions might be able to be submitted in electronic form, although a paper copy is often preferred. To facilitate blind review, all indication of authorship must appear on a detachable cover page only. It is unwise and unethical to send your paper out for consideration to more than ONE journal at a time.

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- Has the correct referencing style been used? Are all the references quoted within the text also listed in the reference list at the end of the article? Are the references complete?

## REFERENCES

Anglin, G., & Morrison. G. (2000). An analysis of distance education research: Implications for the instructional technologist. *Quarterly Review of Distance Education*, 1(3), 180-194.

Diaz, D. P. (2000, March/April). Carving a new path for distance education research. *The Technology Source*, <http://horizon.unc.edu/TS/default.asp?show=articleandid=68>.

Keegan, D. (1990). *Foundations of distance education*. 2nd Edition, London, UK: Routledge.

Perraton, H. (2000). Rethinking the research agenda. *International Review of Research in Open and Distance Learning*, 1(1), <http://www.irrodl.org/v1.1.html>.

Phipps, R., & Merisotis, J. (April, 1999) (<http://www.ihep.com/difference.pdf>). What's the difference? A review of contemporary research on the effectiveness

of distance learning in higher education. The Institute for Higher Education Policy, 1320, 19th Street, NW, Suite 400, Washington, DC 20036.

Saba, F. (2000). Research in distance education: A status report. *International Review of Research in Open and Distance Education*, 1(1), 1-9.