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Strategies for Writing Literature Review

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Abstract

Research methodologies can be classified in many different ways. For example, some researchers distinguish between quantitative and qualitative studies; others distinguish between experimental and non-experimental research; still others distinguish between research that is conducted in laboratories versus in the field (i.e., in classrooms). Obviously, there are many ways to categorize research methods

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Research Centre and Research Networks

The English Literature Research Group hosts the Centre for Editorial and Inter textual Research (CEIR), and the Wales-Ireland network. Members of the Group are also active in the multidisciplinary Crime Narratives in Context research network. Members of the Centre for Editorial and Intersexual Research have an internationally-recognized record in producing on-line bibliographies, innovative databases and scholarly editions. Besides continuing its editorial and bibliographical work, the Centre is extending its research into the field of Illustration Studies, where it has recently launched a database of mid-Victorian Illustration and a new and innovative journal. CEIR also publishes Romantic Textual ties: Literature and Print Culture, 1780-1840.

Research into Irish Romanticism has recently begun to develop and theories a wider 'Celtic' context, incorporating studies of relations with Scottish and, particularly, Welsh literatures, as well as with European fields of study. Furthering Cardiff's tradition for well-theorized and innovative work in post colonialism, the Wales- Ireland network is supported by a seminar series, and has been awarded AHRC funding towards the establishment of a two-year international and interdisciplinary research network. A third project also already underway builds on existing strengths in crime fiction, in developing, with colleagues in European Studies, a multidisciplinary Crime Narratives in Context research network, in which forensic linguists also participate, along with lawyers, sociologists and specialists in other literatures.

OVERVIEW OF RESEARCH METHODS IN EDUCATION

Research methodologies can be classified in many different ways. For example, some researchers distinguish between quantitative and qualitative studies; others distinguish between experimental and non-experimental research; still others distinguish between research that is conducted in laboratories versus in the field (i.e., in classrooms). Obviously, there are many ways to categorize research methods. However, there also is much overlap in such categorizations. For example, a "non-experimental" study can be either quantitative or qualitative; an experimental study can include some qualitative components. This entry does not attempt to classify these methodologies; rather, the various methods are first briefly described and then compared and contrasted.

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Correlation Research. Correlation research involves quantitatively studying the relations between and among variables. One of the hallmarks of correlation research is that cause and effect relations cannot be determined.

Researchers who engage in correlation research do not manipulate variables; rather, they collect data on existing variables and examine relations between those variables. A number of different statistical techniques can be used to analyze correlation data. An example of a correlation research would be an examination of the statistical relations between middle school students' standardized examination scores in mathematics, and the students' demographic characteristics (e.g., gender, ethnicity, socioeconomic status, etc.).

Experimental Research. In an experiment, participants are randomly assigned to one of several treatments. One of the most basic experimental designs involves random assignment to either an experimental group (which receives some kind of treatment), or a control group (which does not receive the treatment). If the differences in treatment between the experimental and the control group are tightly controlled, and if subsequent to the experiment there are measurable differences between the two groups that were not present before the experiment, then researchers often conclude that the experimental manipulation "caused" the differences to occur.

Many researchers and government agencies consider true experiments to represent the gold standard in research; however, it is extraordinarily difficult to conduct true experiments in actual educational settings (i.e., schools). The primary reason for this difficulty is the fact that students can rarely be randomly assigned to conditions or classrooms in school settings. It is also important to distinguish between small-scale experiments and larger-scale clinical trials. Small-scale experiments can occur in settings such as laboratories or classrooms, whereas larger-scale clinical trials often occur across many classrooms or schools.

An example of an experiment would be a study examining the effects of a video presentation on learning multiplication skills. Students in a classroom where all students are learning about multiplication could be randomly assigned to either watch a video that demonstrates multiplication skills, or to watch another video (i.e., a video about how to make ice cream sundaes); the students would probably be asked to view the videos in a highly controlled environment, where the experimental and control conditions could be as similar as possible (except for the video presentation). If on a post-test the students who watched the multiplication video outperformed the other students, then a researcher could conclude that the video "caused" the improved performance.

Quasi-Experimental Research. In quasi-experimental studies, researchers do not randomly assign participants to groups (Cook & Campbell, 1979). Quasi-experimentation is used often in educational research, because it is often impossible and sometimes unethical to randomly assign students to settings.

In quasi-experimental studies, researchers attempt to control for differences between non-randomly assigned groups in a number of ways. Two of the most common methods include (a) matching, and (b) statistical control. The following example explains the concept. A researcher is interested in comparing the effects of a traditional third-grade reading curriculum with the effects of an enhanced version of the curriculum that includes extra homework assignments. If the two versions of the curricula are being administered in

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different classrooms, the researcher can try to "match" similar classrooms on certain variables. For example, the researcher might decide to match classrooms on years of experience of the teacher, wherein teachers with much experience (e.g., 20 or more years of teaching experience) might be paired, so that for each pair of highly experienced teachers, one is assigned to each condition.

In addition, the researcher can statistically control for variables that are related to the outcome. If the researcher knows that variables such as socioeconomic status and prior reading ability are related to reading achievement, then the researcher can statistically control for these variables, in order to better assess the unique effects of the new curriculum.

Qualitative Research. Qualitative research represents a broad framework for conducting educational studies. Whereas quantitative research focuses on measurable variations between and among variables, qualitative studies focus on holistic descriptions of learners and teachers in naturalistic settings.

Fraenkel and Wallen (1996) describe five general characteristics of qualitative research studies. These include:

Researchers collect their data in naturalistic settings (e.g., classrooms), by observing and participating irregular activities.

Data are collected via words or pictures (not via numerical or quantifiable indicators).

Processes (i.e., how individuals communicate with each other about a lesson) are as important as products (i.e., whether or not students obtain the correct answers to a problem).

Most qualitative researchers do not start out with specific hypotheses; rather, they use inductive methods to generate conclusions regarding their observations.

Qualitative researchers care about participants' perceptions; investigators are likely to question participants in depth about their beliefs, attitudes, and thought processes.

A variety of methods can be used to conduct qualitative studies. For example, qualitative researchers can collect their data from direct observations, from analyses of video or audio recordings, from interviews, or from long-term ethnographic studies.

There are a variety of different ways of analyzing qualitative data. Generally, researchers carefully examine their data and discover themes that emerge from the data. Sometimes several researchers will analyze the same sources of data and then compare their conclusions and examine the extent to which they agree or disagree (inter-rater reliability); in other studies, one researcher will conduct all of the analyses, and will also critically examine how his or her own biases may affect interpretations. Software packages have been developed to assist qualitative researchers with data analysis. Two of the most commonly used packages are Envivo and NUDIST.

Longitudinal and Cross-sectional Research. Many research studies in education focus on developmental issues (i.e., how individuals change over time). For example, it is known that the reading strategies that young children use are different from the reading strategies adopted by older children (Pressley & Harris, 2006). There are several different methods that can be used to examine such developmental phenomena.

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In a longitudinal study, researchers collect data on the same individuals over a number of different time periods or "waves." Thus the same group of students might complete study assessments at the end of first grade, second grade, third grade, and fourth grade. Researchers can then examine changes in student data across those four years.

In a cross-sectional study, researchers collect data on individuals of differing ages or developmental levels, at the same time. Thus data are collected for many students, at one time interval only. For example, a researcher might give assessments to 200 first graders, 200 second graders, 200 third graders, and 200 fourth graders all at the same time. Then the researcher can compare the results of students in these four different grades and try to draw some conclusions about developmental differences.

Most researchers agree that when possible, longitudinal studies provide better developmental data than cross-sectional studies. The primary advantage of longitudinal studies is that the same individuals are assessed at different time points; therefore, it is easier to make inferences about true development over time, since the distinct data points represent the same individuals across different time periods. However, longitudinal research is often difficult to conduct, because it is very expensive, and it is often difficult to track individuals over time; many of the students who participate in the first wave of data collection may have moved or may not want to participate in later waves of the study.

Design Experiments. When researchers conduct design experiments, they examine the effects of educational interventions in actual classrooms while the interventions are being implemented. As results are obtained and analyzed, the intervention is changed and continuously re-evaluated (Brown, 1992).

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