Panel 1 - CON: Quantitative research is more effective than qualitative research in science education.

Jocelyn Castro

SED 600

Dr. Rivas

February 14, 2007
Qualitative research does not rely on mathematical procedures to obtain its data (Riehl 2001), but according to Johnson (2005) this method “uses systematic observation to reach understanding” (7). Statistical tests are not fully reliable in taking all factors into consideration with the data collected. Many interactions occur during research that quantitative methods ignore and qualitative considers the significant (Hoepfl 1997). Qualitative research is also called as phenomenological inquiry, where Hoepfl (1997) defines these methods by using the “naturalistic approach that seeks to understand phenomena in context-specific settings” (47). The articles that support the effectiveness of qualitative research have several factors in common. Qualitative research starts off with a focus or area of interest. The open-ended question allows for observation to control the experiment, not theories or expectations. Observation allows for the interaction of the researcher and the research to be significant. The naturalistic approach considers the context of the observation in the environment. As an educator, qualitative research allows to narrow the gap between theory and practice, and soon to be policy and reality.

Peshkin (1993) demonstrates that qualitative research allow studies to “demonstrate the breath of desirable outcome” to arise (23). The open-ended question needed for qualitative research allow for observation to dictate research and support new discovery (Hoepfl 1997). Researchers are not heavily relying on predetermined design, but simply focusing on the new discoveries that arise from the research (Hoepfl 1997).

From the opening question, qualitative research gives a breadth in the type of data collected. Data from interviews to surveys to observation allow for humans to thoroughly interact with the study. Qualitative research allows the “presence of voice in text” (Hoepfl 1997, Eisner 1991) to emerge. Humans serve to be the instruments that collect data and allow for contextualization to occur. Researchers that support this method allows for data to be interpreted
and understood in the whole setting. This approach plays an important role in highlighting problems (Hammersley 2000) and allowing studies to be inquiry driven rather than theory driven (Peshkin 1993).

Allowing for human interpretation of the data allows researchers to be fully engrossed into their study rather than be considered as a separate entity. Qualitative research erases the dichotomy that occurs between the researcher and the research. More importantly, it erases the dichotomy between theory and practice. The holistic perspective allows testers to be involved in the collection of data. The interactions that occur during a study are not superficial. The worldly connections are made to the data. Data connects to the experiences and language of the involved, such as teachers and students. Qualitative research improves the “professional craft knowledge”, rather than being a theory being imposed on many that will soon be deemed ineffective (Hammersley 2000). Having all counterparts involved and collaborate in the study makes it more reflective upon to the reality of educators and students, not the reality of a separate governing body (Creswell and Miller 2000). Riehl (2001) sees qualitative research to “continue to generate rich, contextualized, process-sensitive understandings of phenomena that have sociological import” (128). Data is no longer on the universal level, but it makes sense and is compatible with the local settings.

Qualitative research is more effective for science education because it conveys the realities that is occurring in the everyday classroom, not “what ought to be happening” (Hammersley 2000). Educators are allowed to voice their interpretation in the study, which enriches the research because it no longer is just from the perspective of a government official. Studies become more “believable because of their coherence, insight, and instrumental utility” (Collins 1992, Eisner 1991). The interactions of all factors into the testing, collecting, and
interpreting are significant because perspectives are taken from all sides and try to gap theory and practice with reality.
References


