Research Analysis and Critique

Of

Thomas, K., & Muñoz, M. A. (2016). Hold the phone! high school students' perceptions of mobile phone integration in the classroom. *American Secondary Education, 44*(3), 19-37.

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Research Analysis

Purpose

The purpose of the Thomas and Muñoz (2016) study was to elucidate the opinions of high school students regarding the use of mobile phones for learning in classrooms. The researchers had four specific research questions that they hoped to answer, which were:

> (1) How supportive are high school students of using mobile phones in the classroom? (2) What mobile phone features do high school students perceive as useful for school-related work? (3) What do high school students perceive as the benefits of using mobile phones in the classroom? (4) What do high school students perceive as the barriers to using mobile phones in the classroom? (Thomas and Muñoz, 2016, p. 21)

The study's recommendation was that this information could guide how or what policies and procedures schools could be making regarding mobile phone use in classrooms.

Significant Prior Work

The researchers cited many scholarly works that demonstrate the potential of the mobile phone as a learning tool: from data collection (Bull & Thompson, 2004), to the creation of different forms of communication and presentation (Dlott, 2007), to collaboration between peers and teachers (Looi, Seow, Zhang, So, Chen, & Wong, 2010; Thomas & Orthober, 2011) and personalized instruction (Steel, 2012). The most compelling idea was the benefits of 'mobile learning' (m-learning), where mobile phones could provide students the opportunity to learn

anywhere and anytime, and that it could increase student learning. (Traxler, 2009, Liu et al., 2015).

Research Type

The research was quantitative and non-intervention since Thomas and Muñoz analyzed data that they had gathered through surveys. The research was problem-based since no theories or frameworks were used, and the problem the researchers were focused on solving was providing data for a gap in knowledge of students' opinions in mobile learning.

Research Design

The research design was descriptive using a self-reporting survey method. Thomas and Muñoz created an online survey with a mix of question types, including short answer, "checklists, and 5-point Likert-type questions (SD = Strongly Disagree, D = Disagree, N = Neutral, A = Agree, and SA = Strongly Agree)" (p.25). The survey collected demographic data, mobile phone use data, and perceptions of mobile phone use in the classroom.

Not much detail was provided on how the survey was administered other than it was completed online and during school hours. How participants were selected is discussed below.

Controls

To ensure that the data specifically reflected the beliefs of actual m-learning users, Thomas and Muñoz selected participants only from high schools with a "mobile phone integration initiative" (p.24), which allowed teachers and students to use mobile phones for learning in the classroom. Students were the focus group of this study; however, to address an

alternative hypothesis, the researchers also surveyed the teachers. The size of of the sample was 628 students and 188 teachers, which was large enough for the data to be significant.

Surveys were anonymous and all participants completed the survey in one sitting at a computer in one of their classes.

Research Participants

The sample of research participants were students in grades 9-12 from high schools in a Midwestern school district. As mentioned above, these schools were selected because they had a "mobile phone integration initiative" (p.24), and all the participants had completed the first year of this program. All of the students owned a mobile phone (90.9% owned a smartphone, and 9.1% owned a basic mobile phone). There was approximately an equal representation of gender and grade levels. The majority of students were Caucasian, African American or Latino American.

Instrument Reliability and Validity

The researchers used educational technologists and preservice teachers to review the survey and provide feedback for content validity. All survey questions were deemed valid, although some edits were made to increase clarity. The survey was not tested for reliability. It relied solely on self-reporting procedures.

Alternative Hypotheses

Thomas and Muñoz suggested that student perception and mobile phone use in the classroom could be affected by their teachers; thus, teachers of the participating schools were

also surveyed for owning a mobile phone and their expertise with technology. The data showed that of the teachers who chose to respond, most of them owned a smartphone and considered themselves fairly experienced. There was also a concern of respondent bias, and though there was no procedure to remedy this, Thomas and Muñoz did provide prior research studies that had congruent findings.

Analysis and Findings

There was minimal data analysis. Only central tendencies and dispersion were calculated. Researchers found that students reported themselves as almost experts with technology and they supported the use of mobile phones in the classroom and for learning. They also reported that most students used their phones for school work, in which the most frequently used features were the calculator and the web browser. Thomas and Muñoz also found that students believed that the ringing of the cell phone, thereby disrupting the class, was the greatest barrier to using mobile phones in the classroom.

Discussion

Thomas and Muñoz noted that there were some discrepancies in their findings. For example, although 90.7% of students used their cell phones for school work, only "73.8% of the students supported integrating mobile phones into the classroom instruction, while 70.6% believed that mobile phones supported learning" (p.19). Researchers explained this as a reflection of the students' understanding of the benefits and barriers of mobile phone use. They noted that students saw using mobile phones in the classroom as an opportunity to decrease the digital divide and increase digital fluency; however, it would be at the expense of disruption or

distraction, such as inappropriate use. The researchers found it interesting that students rarely used their phone to create digital content for learning, and that this could be influenced by the technological tools (or apps) the teacher uses in the lesson. Thomas and Muñoz saw this as a need for more teacher professional development on how to integrate technology effectively or how to design lessons with technology that promote 21st century skills. They concluded that further research in this area of mobile phone use in the classroom is needed to generalize their findings. They also recommend further study into how much impact a teacher has on student technology use, how much impact does disruptive or distracting phone behaviours have on student learning and how are schools creating and implementing policies to address these issues.

Research Critique

Purpose and Significance

Thomas and Muñoz noticed that as mobile phone use became increasingly popular, many schools or teachers were banning them from the classroom. These researchers believed that great learning opportunities could be afforded by the mobile phone (m-learning), which was ascertained by prior scholarly work. Moreover, the researchers believed that students are important stakeholders in their learning and should have a voice in this matter. Their research is significant because it could provide crucial, descriptive data on student perceptions of mobile phone use in the classroom to fill a knowledge gap and to inform educators in their practice and administrators in their policy making.

Methodological Issues

Because the research design was quite simple and descriptive and the surveys were conducted only in schools where there was a mobile phone integration program, bias played a large role in the reliability and the generalization of the results. The findings were subject to experimenter bias because even though the sample size was large enough, the researchers only selected participants that had experience with using mobile phones to learn in the classroom. This is not representative of the general student population that would include students that may or may not have a mobile phone and that may or may not have any experience using them to learn in the classroom; thus, it is hard to generalize the data to the larger population. In addition, by only selecting schools that implemented m-learning and students with m-learning experience, an expectancy effect is possible as it is not surprising that the researchers found the participants to be in great favor of m-learning. The findings were also susceptible to respondent bias when participants were asked to report on sensitive issues, such as if they use their phone for sexting, cyberbullying or cheating. Attempting to address this, Thomas and Muñoz discussed that these findings were similar to other findings from scholarly research in the same area.

Other Weaknesses

Another area of concern is in the data analysis and the presentation of the findings. It is very helpful that Thomas and Muñoz provided the full survey in the appendix of their paper because on closer examination, it seems that some survey data was not presented correctly or discussed in the actual paper. For example, the researchers noted in the findings that they used a dichotomous scale for some survey questions, but the appended survey has no dichotomous scale and was almost completely based on a 5 point Likert scale. Also, the survey questioned the

students on how their teachers used the mobile phone in the classroom and their perception of how teachers could be a barrier to mobile phone use in class; yet, none of this data was found in the data tables and it was weakly referenced in the discussion. This may have been left out because students may not have thought that the teachers or the 'm-teaching' was an area of concern; however, to leave this data out could be a manipulation of the results in favor of desired outcomes.

Strengths

One strength of this study was the discussion. It was clearly organized and logical. Thomas and Muñoz have put much effort into comparing their findings with other scholarly work, which boosted the relevance of their data. They also directly addressed how their study was limited in terms of reliability and external validity, and described how further research could remedy this. Thomas and Muñoz made other recommendations for future study that demonstrated how their study illuminated key issues in the policy and practice of implementing m-learning.

Another strength of this work was how Thomas and Muñoz formulated four research questions and used them as a framework for the survey, the presentation of the data and for the discussion. The questions themselves were meaningful because they addressed current ideas and concerns regarding mobile phone use in the classroom and they were specifically interested with the voice of the students using them.

Overall Recommendations

This research does provide a unique and important contribution to the field of education because Thomas and Muñoz examined student perceptions on a variety of areas in regards to

mobile phone use in the classroom. To understand what students believe are the benefits and concerns with m-learning is helpful for educators, especially as mobile phone use is presently a given cultural constant. Also, to be able to demonstrate with detail what students are actually using their phones for in class is really important because it highlights a potential gap between *available* technological tools for learning and the *actual* technological tools used for learning, in which Thomas and Muñoz recommended that more professional development in m-learning be provided for teachers. Because of these reasons, this study is valuable and it is clear why it was published and presented.