

Methods Literature Review

Steven Wong

New Jersey City University

## **Participants**

The research is to have participants that will assist the researcher in understanding the problem and the research questions. Discussing the strategies to recruit individuals for the study is challenging and where the selected participants are appropriate for the study. I found a range of participants during my review of journal articles; the participants connected in a way where the participants were going to help understand the problem and the research questions. The selected participants vary depending on the criteria of the research and what needed answered. The participants range from information and communication students who were taking a database design course; another study involved eight grade students attending a private school in a suburban setting of Islamabad, Pakistan, and other involved participants who took business accounting courses. Also, athletes of the academy in Cyprus.

## **Sample Size**

The researcher needs to decide on the sample size that is going to be used to help answer the research questions. There were different sampling methods involved in the five journal articles reviewed. A convenience sampling noted for two reviews. One used for the eighth-grade participants of computer courses at a private school in Islamabad; As a result, a sample of 72 eight-grade participants drawn, and the participants randomly assigned to both the treatment groups and control groups (Khan, Farzanz, & Malik, 2017). Also, the other convenience sampling applied to the athletes of the Cyprus research, where a total of 162 athletes from six cohorts participated in the study (Constantinou & Ioannou, 2016). The sample size depends on the research requirements and the willingness of the participants to participate in the study. The sample size varies for each study depending on which research design the researcher is looking to choose; there is a minimum amount of sample required for the research design.

## **Data Collection**

The data collection varies among the five types of research reviewed. For Rahman and Hashim (2018) study, after a completed lesson, a quiz using Kahoot to evaluate the students' understanding before going to the next experience. Also, a survey was administered to the students when the semester did for measuring students' engagement through gamification.

For Khan, Farzana, & Malik, (2017) study, quantitative data approach methods include classroom observations, and pre and post-tests have utilized to statistically analyze and compare means in this research study in the secondary school study. Also, a qualitative method focused group discussion employed in this study to gather the insights and ensure the effectiveness of the application in a science course.

For Constantinou, V., & Ioannou, A. (2016), this is a mix-method approach that involves the quasi-experimental quantitative design and the focus group qualitative research method. This design controls the variance due to individual differences. It increases the likelihood that any differences found across conditions are the result of the treatment and not characteristics of the participants. At the end of the seminars, the investigators conducted a 60-minute semi-structured focus group.

## **Instrument**

All reviews involved a Likert type scale system used with a different amount of questions asked for each research design. One study involved the playing experience after the interaction with the game on a 5-point Likert scale with a set of 17 questions concerning the playing experience (Rahman, Ahmad, & Hashim, 2018).

Another research consists of 18 items; this survey measured students' engagement using two constructs defined by skill engagement and participation engagement (Khan, Farzana, & Malik, 2017).

After the seminar (all 30 questions), a short questionnaire administered to the athletes. The survey addressed students' experiences with eight Likert-type questions, ranging from 1 (completely disagree) to 7 (completely agree) repeated for the experience with clickers and the experience with paper-and-pencil (Constantinou & Ioannou, 2016).

For Ukala, & Agabi (2017) study, a self-designed 41 items instrument titled “Linking Early Childhood Education with Indigenous Education using Gamification Questionnaire validated for the study. The instrument structured after the four-point Likert type scale

### **Data Analysis Technique**

Different data analysis used among the reviewed journals. For Khan, Farzana, & Malik, (2017) study, quantitative data approach methods include classroom observations and pre and post-tests utilized to statistically analyze and compare means in this research study in the secondary school study. Also, a qualitative method focused group discussion employed in this study to gather the insights and ensure the effectiveness of the application in a science course.

For Constantinou & Ioannou (2016), the focus group dataset was transcribed and code, a total of 29 thematic codes were identified until saturation was reached. These classified into three broader themes associated with the use of clickers in the training seminars.

### **Validity and Reliability**

For three studies, reliability reached by acceptable threshold through Cronbach's alpha to measure the instrument. For Rahman, Ahmad, & Hashim (2018) study, the reliability of the constructs used in the Gamification Acceptance Model tested using SPSS 20.0.0 of 50 responses.

The acceptable values are above 0.7 threshold using Cronbach's alpha to measure the internal consistency of the instrument, in conclusion, the instruments used can be said to be reliable.

For Rosli, Khairudin, & Saat, (2019), the reliability analysis result of the instrument's item had a Cronbach's alpha value of more than 0.70, signify that the items were reliable.

Also, for Ukala & Agabi (2017) study, the reliability testing of the instrument was done using the Cronbach's alpha method which generated a coefficient of 0.81 indicating a high-reliability index.

### **Generalizability**

After reviewing the five journal articles, one noted about the generalizability, where researcher study additional cases and generalize findings to new cases in the Ukala and Agabi (2017) study.

## Reference

- Constantinou, V., & Ioannou, A. (2016). Technology-enhanced learning in sports education using clickers: Satisfaction, performance and immediacy. *International Journal of Education and Development using Information and Communication Technology*, 12(2), 68-79.  
Retrieved  
<https://draweb.njcu.edu/login?url=https://draweb.njcu.edu:2053/docview/1821090603?accountid=12793>
- Khan, A., Farzana, H. A., & Malik, M. M. (2017). Use of digital game-based learning and gamification in secondary school science: The effect on student engagement, learning and gender difference. *Education and Information Technologies*, 22(6), 2767-2804.  
doi:<http://draweb.njcu.edu:2086/10.1007/s10639-017-9622-1>
- Rahman, R. A., Ahmad, S., & Hashim, U. R. (2018). The effectiveness of gamification technique for higher education students engagement in polytechnic muadzam shah pahang, malaysia: *Revista de universidad y sociedad del conocimiento. International Journal of Educational Technology in Higher Education*, 15, 1-16.  
doi:<http://draweb.njcu.edu:2086/10.1186/s41239-018-0123-0>
- Rosli, K., Khairudin, N., & Saat, R. M. (2019). GAMIFICATION IN ENTREPRENEURSHIP AND ACCOUNTING EDUCATION. *Academy of Entrepreneurship Journal*, 25(3), 1-6.  
Retrieved from  
<https://draweb.njcu.edu/login?url=https://draweb.njcu.edu:2053/docview/2331377641?accountid=12793>
- Ukala, C. C., & Agabi, O. G. (2017). Linking early childhood education with indigenous education using gamification: The case of maintaining cultural value and identity. *Journal of International Education Research*, 13(1), 17-26.