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# Teaching Qualitative Research Online: Using Technology to Leverage Student Engagement

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**Using Technology to Leverage Student Engagement**

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## Abstract

Three faculty colleagues collaborated to effectively pilot the concept of an online community to integrate innovative technologies for learning qualitative research concepts and skills in an online research course. The strategies implemented resulted in engaged students with improved research skills. Students also expressed how much they enjoyed learning and implementing concepts of qualitative research. Technologies that were integrated included cutting-edge apps, social media, and Blackboard collaboration tools. The team followed the ASSURE model (Smaldino, Lowther, Russell, & Mims, 2015) to plan and implement for effective integration of technology and media.

## Introduction and Background

Research is essential for the growth of any professional field because it advances the theory and practice of the field. However, most students enter their graduate program with preconceived ideas and negative attitudes regarding research, perhaps due to the negative connotations associated with math and science in general (Lalayants, 2012). Consequently, teaching research can be challenging as research instructors have to implement creative strategies to engage and motivate students (Koh & Zawi, 2014). In addition to being an expert in research as a subject matter, teaching research online also requires the instructor to effectively blend technology, instructional strategies, and content.

Although most strategies that can be implemented in a traditional face to face class can also be implemented online (Morrison, Ross, Kalman, & Kemp, 2013), "strategies will likely require creative and innovative approaches to engag[e] learners" (Simonson, Smaldino, & Zvacek, 2016, p. 186). Additionally, there are misconceptions about teaching research online (Budhai & Williams, 2016). Students may have some negative attitudes towards taking an online research class; they often assume that the content might be harder to grasp if they are not learning it face-to-face. Teaching research requires getting students to think critically, synthesize literature, evaluate ideas, identify and analyze issues, solve problems, and be organized. Thus, whether a course is face-to-face or online, the content will be challenging. On the other hand, integrating instructional strategies to engage students can increase learners' level of satisfaction and at the same time enable students to increase their research skills (Budhai & Williams, 2016).

Engagement strategies that are creative and fun can increase student motivation and enthusiasm towards online education (Marchand & Gutierrez, 2012). One effective engagement strategy can be to create online learning communities within the classroom. In addition, effective integration of technology might contribute to students increasing motivation and engagement; and

consequently, mastering the learning outcomes (Chen, Lambert, & Guidry, 2010; Diemer, Fernandez, & Streepley, 2012; Nelson Laird & Kuh, 2005; Prince, 2004). Thus, the idea of piloting the concept of creating an online community and integrating innovative tools in a qualitative research course became the basis for the project.

This paper describes how three faculty colleagues collaborated to effectively implement the concept of an online community and integrate innovative technologies for learning qualitative research concepts and skills in an online research course. The team members, and authors, were faculty colleagues that taught in the doctor of education online program. For the purpose of the narrative, the authors are referred to as the qualitative research subject matter expert and class instructor (SME), the research expert and technology innovator (TI), and the expert in instructional technology and distance education (ITDE).

In 2013, the TI and her colleagues developed a Technology Integration Learning Community (TILC), an online professional learning community focused on effective technology integration (see Reeves et al., 2015). The SME expressed to the TI the need to increase engagement and create positive attitudes towards research in the students taking her online qualitative research class, at the same time that they learned and improved their research skills. Using the framework of the TILC, the SME, TI, along with an ITDE expert developed the idea for this study. While the SME was responsible for developing the content and activities to achieve the learning outcomes, the TI assisted with implementing the learning community concept, as well as the technological tools to support the activities. The ITDE expert was then called upon to assist in the planning for effective integration of technology for learning.

The team followed the ASSURE model (Smaldino et al., 2015) to plan and implement for effective integration of technology and media. The strategies implemented resulted in engaged students with improved research skills, as well as positive experiences associated with qualitative research. Technologies that were integrated included cutting-edge apps, social media, and Blackboard collaboration tools.  Following is a description of how the team members implemented the ASSURE model, the tools that the students used, the feedback from students, and the conclusions and recommendations.

**The ASSURE Model**

The team decided to address two course student learning outcomes (CSLO): (a) Identify various ways to collect qualitative data (e.g., interviewing, focus groups, participant-observer); and (b) analyze qualitative data using traditional and electronic methods. The ASSURE Model was used to plan the lessons with technology to address the outcomes.

The ASSURE model consists of the following six steps to help teachers effectively integrate technology and media into their lessons (Smaldino et al., 2015): Analyze learners, state objectives, select strategies and resources, utilize resources, require learner participation, and evaluate and revise. Following is a description of how the team used the ASSURE model.

> **Analyze learners.** The students were online, non-traditional students in the doctor of education program. All students had previously taken an introductory research class, but not

necessarily online. Students were required to take qualitative research design to move forward with their dissertation work. Having taught the course for several years online, the SME knew that students would be anxious at the beginning of the semester.

**State objectives.** Based on the CSLO, three lesson objectives were formulated: Conduct qualitative interview or observation, transcribe qualitative interviews, and code qualitative data.

**Select strategies and resources.** To accomplish the objectives, the team planned student-driven strategies of peer collaboration, peer demonstration, and discussions; and instructor-driven strategies of presentations, demonstrations, and tutorials. In order to provide students more flexibility and potentially to increase engagement, an online community outside the course using Google+ was created as the platform for collaboration. The community was private; you had to be invited by the SME to join the Google+ online learning community.

The following collaborative activities were designed to address the objectives:

1. Discuss and learn about basic concepts of qualitative methods and innovative technologies available for data collection and coding. The SME formulated a series of initial discussion posts to foster this process and posted them within the online learning community. The discussion posts were as follows: (a) Identify, post, and reflect on several data collection methods used in qualitative research such as observations, interviews, focus groups, content analysis, etc.; (b) Research and post about innovative qualitative tools that enable researchers to conduct qualitative data collection; (c) Explain in detail what the tools were and how to use them; and (d) Choose a data collection method and a tool (posted by you or one of your classmates), reflect on the tool, and identify how you will use it. Students were encouraged to provide responses and recommendations to their peers on each of the discussion posts.

2. Conduct interviews or observations using the selected tools. Students were required to post any instruments (e.g., interview guide, observation protocol) and corresponding transcripts into the online learning community. Each student was then required to review and critique the interview as well as the tool they chose, and make recommendations and feedback to their peers. Students were encouraged to provide responses and recommendations to their peers on each of the discussion posts.

3. Analyze the transcripts and code. Students were then required to present the results to the class using GoToMeeting (a videoconferencing platform), and post the results in the online learning community. Students were encouraged to provide responses and recommendations to their peers on each of the discussion posts.

4. Reflect on the tools and process. Students were required to assess the learning community platform by posting their thoughts/ recommendations on the use of the innovative tools and the experience of participating in an online learning community.

**Utilize resources.** Before classes started, the SME and IT planned and made sure that technologies and platform used for collaboration and communication were functional and ready

to be used by the class (i.e., Google+, GoToTraining, and Blackboard tools). As the students presented the innovative mobile and desktop apps for data collection and coding that they selected to work with, the SME made sure that these were functional and appropriate before students would conduct the interviews and observations.

**Require learner participation.** The strategies included instructor-student and student-student feedback loops and interaction, peer review, peer support and enjoyment. Students were encouraged at all times to proactively interact with peers and the SME. The SME actively engaged as well, providing continuous feedback to the group and to individual students on each of the course activities. Following is how students and the SME engaged in each activity:

1. Discuss and learn about basic concepts of qualitative methods and innovative technologies available for data collection and coding. Students began their research and posted their technology tools online; they gave their feedback on how to use the tools and what the tools would be used for. Discussions ensued with an evaluation of each tool and feedback on whether or not it could work for qualitative research data collection. Students were encouraged to reflect on the tools and their uses and to meaningful responses and recommendations to their peers.

2. Conduct interviews or observations using the selected tools. Students conducted the interviews or observations using one of the tools posted in the online learning community. They were required to post any instruments (e.g., interview guide, observation protocol) and the corresponding transcript. Students were asked to review and critique the interview as well as the tool they chose. Students were asked to post recommendations and feedback to their peers.

3. Analyze the transcripts, code, and present the results. Students were asked to analyze the transcripts, code, present the results using GoToMeeting (a videoconferencing platform), and post the results on the discussion board. Feedback was given to each student.

4. Each student was asked to assess the initiative by posting their thoughts/ recommendations on the use of the innovative tools and the online learning community.

**Evaluate and revise.** The SME compiled the student feedback and met with the TI and ITDE expert to discuss ways of improving the experience.

**Tools Used by Students**

As part of the pilot, students were asked to locate, utilize, and evaluate apps for collecting and analyzing qualitative data. The tools that the students found for data collection and coding can be organized into the following categories: data collection apps, data recording apps, data analysis apps, and companion apps. Each app is described below, along with a summary of students' opinions on the app.

**Data collection apps.** Two primary apps were used for collecting data: Interview Assist and Observation 360.

*Interviewer assistant.* Interviewer assistant is an app that can be used to guide the interviewer through the interview process. The interview guide can be uploaded with probing questions to guide the interview process. The app allows you to create and organize question prompts, create interviewee profiles, use preset question templates, take text and audio notes, utilize the embedded calendar for planning interviews, and attach photos and videos; the app also integrates seamlessly with Drobox. Although students loved this app, they warned that it was not very user-friendly.

*Observation 360.* This app allows you to log each observation and choose which codes you want to assign to the observation to record the data. Following the completion of the observations, it provides the results in a data table. The app allows digital observations and evaluations, can be used with the iPhone and iPad, and has the ability to create reports based on observation data. Students loved this app; although there was a slight learning curve, they claimed it was "life-changing."

**Data recording apps.** Two primary apps were used for recording data: iTalk Recorder and Dragon. These apps are designed for voice recording and recognition. They also have play back options and the ability to translate many different languages including English, French, German, Italian, Japanese, Simplified Chinese, and Spanish.

*iTalk Recorder.* iTalk is a simple, user-friendly recording app that allows you to record, append existing recordings, select the recording quality, manage your recordings, and share your recordings via email, Dropbox, or iTunes. Students "love[d] iTalk;" it was "super time consuming in the beginning but worth the transcription time."

*Dragon.* Dragon, formerly Dragon Dictation, is a mobile dictation app that automatically transfers voice recordings to text with 99% accuracy, and allows you to seamlessly edit and share the transcripts directly from your mobile device using email, Dropbox, Evernote, and more. A number of students felt Dragon was a great app and enjoyed the amount of time it saved. One student offered, "you have to go back to check accuracy, some words were not correct" and recommended using a recorder as a back-up to check for accuracy.

**Data analysis app.** Two main apps were used for analyzing data: Dedoose and ATLAS.ti.

*Dedoose.* Dedoose was the main data analysis app presented by students. Dedoose is a modern, cross-platform research app for analyzing qualitative, quantitative, and mixed methods research seamlessly. Dedoose can be accessed anywhere, anytime on their secure website. Whether analyzing text, photos, audio, videos, or spreadsheet data, Dedoose does it all and has the ability to add collaborators easily. Although this was one of the tools students were going to try, no student specifically commented on its usefulness.

*ATLAS.ti Mobile.* ATLAS.ti makes large bodies of text, graphs, video, and audio data extremely manageable, while allowing you flexibility to be creative. Compatible with a variety of media types, exploring large amounts of data has never been so easy. ATLAS.ti also has the

capability to support multi-method and multi-user projects. According to one student, it was "hard to learn but [had an] amazing visual to help understand the coding." And another loved that it was free.

**Multiuse app**. One of the best discoveries over the course of the semester was MaxApp that could be used for both data collection and analysis. MAXApp is a one-stop shop, doing the bulk of the data collection and analysis for you. Users can collect audio, video, photos, and text data; tag it with a location; add memos; code and organize the data; upload to MAXQDA for seamless transition to a desktop; and analyze it. You can even use emoticons for non-verbal data collection and coding. However, according to one student, "The MAXQDA application has a lot of features, but not very user friendly for beginner coders… I feel the application can prove to be useful, but it will require an individual to review the tutorials a few times."

## Feedback From Students

The SME collected feedback related to students' overall engagement in the class. The SME asked the students to share their thoughts regarding engagement with their classmates and with the instructor in the Google+ community. The SME also asked the students to please share their overall experience using the apps to help with qualitative data collection and analysis, what they liked, and what they would recommend for future courses.

Overall, the feedback from students was very positive. Although students appeared displeased and reluctant at first to do the extra work, it was apparent that they had realized very quickly how the tools would save them time when collecting data for their dissertations. The students were able to learn how to collect and analyze qualitative data by experiencing it. Students used these skills as they were learning them and perhaps did not realize that they were evaluating the apps at the same time.

The feedback from the students was also inspiring. Students expressed how experiencing something in real life as they were learning made it so much easier for them to master the skills and reduce their anxiety about learning research skills. In addition, they were able to engage with each other and create a learning community.

Following are some of the comments from the students:

1. "I can't believe how fun it was to learn how to code. It was scary at first. It was worth all the hard work."
2. "I can't believe I was actually coding, I didn't realize I was learning how to code as I was doing it. It was amazing."
3. "At first, I freaked out thinking about the amount of work we were going to have do, it turned out to be fun and not a hard as I thought; plus I learned how to conduct an interview."
4. "Aside from learning how to conduct an interview, we made friends for life and helped each other."
5. "I really enjoyed getting the support from my peers and learn how to do data analysis at the same time! Best class ever!"
6. "I can't believe I came out of a research course learning how conduct research skills. This

course was hard but so much fun, I had a hard time with the tools and some research concepts but my peers and the professor helped me so much."

7. "Best class ever. Lots of work but so much fun!"
8. "The idea of research course was so scary but the community helped me so much."

**Conclusions and Recommendations**

The use of the ASSURE model was an easy model to follow and helpful for planning and integrating the technology. The model allowed for planning of collaborative strategies and integration for technology based on the characteristics of the students and the course objectives.

The team approach for designing online instruction was effective in the project. This approach allowed the SME to focus on the content and strategies, while the IT and ITDE expert focused on the tools and design. In addition to being an expert in the subject, and bringing creativity for engagement, online instructors often need to be skillful in designing, planning, managing the online course platform, and using innovative technologies. Seldom, a single instructor is an expert in all these areas. In this project, each team member came with different expertise that supplemented each other. For example, the IT team member implemented her skills and ideas with apps and the online learning communities, she also reminded the team members to test the tools before the students used them to ensure that they were working properly. The ITDE team member implemented her skills and expertise in instructional design and planning for effective integration of technology for learning and reminded the team members to always think of the objectives and outcomes before the technology—the goal is the learning and the technology is the means. The SME brought her skills and knowledge in qualitative research and grounded the team members by reminding them that this was a research course and the students needed to learn research skills.

In general, the students enjoyed learning the tools and the qualitative-research skills. As expressed in their feedback, students were engaged as a result of the innovative approach to teaching qualitative research online.

Overall, it can be concluded that teaching and learning qualitative research with innovative technology can be fun and engaging for students when planned purposefully. Planning for effective integration of technology with student-centered strategies, such as collaboration in an online learning community, allows the students to, not only learn the skills, but also engage and enjoy mastering concepts and skills that can be difficult.

The team also learned some lessons as a result of this pilot study and recommends the following:

1. Motivate learners and discuss with them pre-instructional activities. Before using technology, it is important to explain to the students in detail what technology tools you will be using and why. Get a buy-in from the students; make sure they are on board.
2. Conduct a pre-assessment of students' research and technology skills. It would have been great to have a baseline of where the students were in term of using technology and research skills. Throughout the course, the instructor had to go back and explain simple concepts. These concepts could have been prepared at the beginning using small tutorials. Many hours

of class time were spent on teaching simple technology skills and basic research terms.

3. Consider the time it takes to plan for integration of new tools for learning. It was time consuming to evaluate and learn how to use the apps. The instructor should add class time or provide extra credit for this type of activity.

4. Utilize resources that are available for faculty and students. There are many resources that are available at the university to help students navigate online courses effectively. For example, blackboard support and the HELP desk. These resources may have been useful for students prior to researching the tools.

5. When implementing an online learning community or social media, especially if it is outside of the learning management system, one must ensure privacy and provide alternative means for students being uncomfortable with posting on social media.

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