# Learning by Doing: Building an Educational Technology Database App with Glide

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## Introduction / Need for Innovation or Idea

Technology has the potential to transform learning environments (Bailenson, 2018). Historically, teachers have opted to use technology for the wrong reasons, such as for the sake of convenience or due to pressure from school administrators (Herrington & Kervin, 2007). As a result, teachers frequently struggle to use technology in meaningful ways with their students, especially in their early years in the classroom (Clausen, 2007). Yet, technology skills are an essential component of quality education and are needed to engage in a global society (Kent & Giles, 2017). Such notions suggest an important question: How are preservice teachers trained to incorporate technology into their classrooms? Some teacher preparation programs require a standalone technology integration course as part of their degree programs, whereas others have no such requirement. In either scenario, it is in the best interest of teacher preparation programs to provide meaningful instruction on technology integration throughout the entire degree program (Borthwick, Foulger, & Graziano, 2020). Doing so will positively impact the development of competent, prepared teachers who are ready to work with the students of the 21st century.

A plethora of educational technology that teachers could integrate into their classrooms exists. However, these technological solutions are not adopted for various reasons, such as teachers' lack of knowledge about the technology, limited proficiency with using the technology, or teachers' lack of perceived usefulness of specific technology tools (Kent & Giles, 2017). In addition, with the increasing professional demands faced by teachers, they may not have the time to explore these technologies. How can this issue be addressed? How do preservice teachers learn about and keep track of educational technology that they can integrate into their instruction? Students enrolled in the Methods of Teaching Agricultural and Human Sciences course at Mississippi State University learn by doing. They build an educational technology database app to assist them in learning about specific technologies, what these technologies do, and how teachers can use such technologies as part of their instructional approach.

## How it Works / Methodology / Program Phases / Steps

After a short lecture on using instructional technology, students explore educational technologies to integrate into instruction for their microteaching experiences. First, students develop a brief description of the tool and potential uses for the tool. They also provide a URL for quick access. Next, a Google Form compiles this information into a manageable spreadsheet. This spreadsheet serves as a crowdsourced database of educational technology tools and potential uses of said tools. Each student is required to submit two tools to the database. As a class, we review the database, clean up the data, and remove duplicate entries as needed. We then use Glide to transform the crowdsourced database into an app.

Glide is a platform that allows a user to build an app in minutes with no coding required. We connect our Google Spreadsheet to the Glide platform, customize the layout and display of the data, and then publish the app. The app is distributed to students via a link that they bookmark on their smartphones. The "Ed Tech App" is then referenced throughout the semester as students plan lessons and develop their technology integration skills.

## Results to Date / Implications

The ‘Ed Tech Apps’ project was implemented for two semesters (Spring 2021 and Fall 2021) in the Methods of Teaching Agricultural and Human Sciences course at Mississippi State University. The Spring 2021 Ed Tech App and the Fall 2021 Ed Tech App included 43 and 87 technology entries that students could reference throughout the semester, respectively. Students spoke favorably about this project and frequently mentioned it as being helpful in a mid-semester course evaluation across both semesters. Students indicated that they often used the Ed Tech App to assist them in lesson planning for their microteaching experiences. The use of educational technology within microteaching has increased compared to previous semesters when the Ed Tech App project wasn’t used in class. Students in the teacher preparation program have expressed how useful the app is as they prepare lessons for their student teaching internship. Additionally, these students have highlighted ways they may be able to use the skills of building a no-code app in their future programs. For instance, one student mentioned building a database with resources for CDEs that could help their future students prepare for competitive events.

## Future Plans / Advice to Others

For the next iteration of this project, we plan to expand the information included for each entry in the database. Additional information to be collected for each entry includes: (1) pricing, (2) an ease-of-use rating, (3) privacy policy, and (4) an evaluation rating of the tool based on the Substitution, Augmentation, Modification, Redefinition (SAMR) model. In addition, we will work to develop a template to increase the aesthetics of the app itself. Finally, in the future, we may try to collaborate with another teacher preparation program to build a more robust database to include discipline-specific technology that Career and Technical Education (CTE) teachers can use to teach their future students.

## Costs / Resources Needed

Glide is a freemium platform that allows you to turn spreadsheets into functioning apps. It has drag-and-drop components to help build an app in a ‘what you see if what you get’ environment. For this project, we used the free version of Glide to eliminate any financial barriers that could otherwise have impeded our project. Subsequently, time was the most significant resource needed. In its current form, the project spans three 50-minute class sessions. As the project is revised, we anticipate expanding the project to take four 50-minute class sessions.

## References

Bailenson, J. (2018). *Experience on demand: What virtual reality is, how it works, and what it can do*. WW Norton & Company.

Borthwick, A., Foulger, T. S., & Graziano, K. J. (Eds.). (2020). *Championing technology infusion in teacher preparation: A framework for supporting future educators.* International Society for Technology in Education.

Clausen, J. M. (2007). Beginning teachers' technology use: First-year teachers development and the institutional context's affect on new teachers' instructional technology use with students. *Journal of Research on Technology in Education, 39*(3), 245-261.

Herrington, J. & Kervin, L., (2007). Authentic learning supported by technology: 10 suggestions and cases of integration in classrooms. *Educational Media International, 44*(3), 219-236.

Kent, A. M., & Giles, R. M. (2017). Preservice teachers' technology self-efficacy. *SRATE Journal, 26*(1), 9-20.