STEAM Conference Presentation
Due June 20, 2018

Workshop Title: Ready to Learn: Interactive Development of Educational Media for K-2nd graders

Abbreviated description:

Provide a detailed description of your presentation so the review committee can visualize the session, including any hands-on activities. Describe how you will address the selected strand. (3,000 characters maximum)

With the majority of teachers incorporating digital content into their daily lessons, there is a growing need to provide educationally valuable digital content that is aligned to Next Generation Science Standards, pedagogically accurate, and technically usable and engaging for young children in the classroom. Early collaboration between educational researchers and producers of educational media provides an important platform for formative evaluation. Funded by the Ready to Learn grant, WestEd conducted a series of formative tests of newly developed educational media designed to integrate Next Generation Science Standards for Kindergarten to 2nd grade.

Our research team partnered with a large public television network to evaluate its educational media content related to an upcoming science television show. This content was intentionally designed as a suite of early science materials and included science storybooks, mobile applications in varying stages of product development ranging from alpha to beta versions, and character designs. The goals of formatively evaluating the products in development include: identifying early evidence of students' science understanding and engagement with the scientific content, determining usability and technical issues of the alpha and/or beta versions of the digital products, providing recommendations for the next round of product development, and understanding how different types of educational media fit into the classroom environment. Lastly, tests on the appeal of the characters featured in the show were conducted in order to ensure that the show would be engaging and interesting to its target audience of young children.

Incorporating formative evaluation early and often in the iterative design process of educational products will help ensure that the academic content, pedagogy and embedded scaffolding is incorporated accurately, assess whether the tone and context of the product is appropriate for the targeted age group, and identify usability issues related to the game mechanics and user interface.

The presentation will cover our most utilized formative techniques including expert teacher reviews, student feedback session, student user testing, and classroom feasibility

studies. For example, the student feedback sessions provide developers with insight on how students engage with the science storybooks and characters and gauge students' understanding of the major plotlines and scientific content.

In this presentation, attendees will learn formative evaluation techniques utilized when testing newly created educational products including storybooks, mobile applications, and television show characters. This will include a chance to interact with a selection of the educational media products, allowing attendees to directly experience and to visualize how educational media platforms may be used to forward scientific learning in children.

In what ways does this workshop address how to contextualize STEAM learning?

The storybooks and mobile games help Kindergarteners to 2nd graders contextualize their science learning by promoting their science knowledge and understanding of the process of inquiry. By engaging with age appropriate, contextualized, and pedagogically accurate educational media, students may become excited and motivated to learn more about STEAM. In addition, the educational content evaluated by this study was uniquely designed as a suite of media materials, encompassing varied media channels – such as television shows, mobile apps designed for entire family use, etc. -- to create a holistic and truly contextualized STEAM learning experience for young children.

What will be the key attendee takeaways after participating in your presentation?

Attendee will learn formative evaluation techniques utilized when testing newly created early science products including storybooks, mobile apps, and television show characters. Formative evaluation techniques include expert teacher reviews, student feedback session, student user testing, and classroom feasibility studies.

In what ways does this workshop intersect with concepts of equity and access in STEAM education?

The Ready to Learn (RTL) grant, funded by the US Department of Education, supports the development of educational media for preschool and early elementary school children and their families. Its goal is to promote early learning and school readiness, with a particular interest in reaching children from low-income families. As such, a critical component for the recruitment of study participants is the requirement that a diverse population -- including English learners, low income students, and students of color -- comprises a majority of the sample study. In ensuring a diverse sample, formative evaluation of the early science products, developed by the RTL grant, also ensures that these products will be developed with the aim of being fully accessible and engaging to diverse populations.