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Interface Design of Web-based Educational Platforms for Young Students

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TREO Talk Paper

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Abstract

With the outbreak of the Covid-19 pandemic, almost all the school programs in the United States are closed. Most educational programs have moved online. Both teachers and students are facing challenges adapting to this new teaching and learning mode. This paper will focus on the interface design of web-based educational platforms for students and teachers from elementary and middle schools. The age of students from elementary and middle schools typically ranges from 5 to 13 years old. Their computer literacy level is still preliminary. So traditional online teaching platforms may not be appropriate for them. The design of learning systems that are "appealing, attractive, and engaging to learners of different ages… is of paramount importance" (p. 27) and has been identified as one of seven grand challenges in human-computer interaction (Stephanidis et al., 2019). Although there are many educational apps designed for kids, most of these apps usually only provide contents for the kids to watch or interact with, without a coach to teach or guide them. Although online synchronous teaching started to grow commercially in the past few years, they are rarely integrated into the traditional public schools. Meeting tools such as Zoom and Google Meet are great applications for college students or high school students with higher computer literacy. For the younger students, web designers need to give more thoughts into developing aesthetically pleasing and highly interactive educational applications to engage students. For example, the use of educational games, such as those embedded in a 3D virtual world, has been proposed and used in developing educational platforms for young students (Eschenbrenner & Nah, 2007; Eschenbrenner et al., 2008).

This paper will propose interface design guidelines for educational platforms specifically for young students and their teachers. Developmental psychology and education theories will be reviewed to help offer guidelines for young students' preferences in interface design. In order to provide the best learning experience for younger students and best teaching experience for their teachers, we will first investigate users' characteristics and preferences by surveying parents of young students in different age groups from local public schools. The survey will focus on color preferences, thematic interests, and interaction modes. Teachers will also be surveyed to find out the challenges they face with online teaching. In addition to surveying users, we will examine the curriculum that is currently in use in most elementary and middle schools to better understand the scope and identify better and more engaging ways to deliver customized content and knowledge to students.

References

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