

Using Design Thinking to Integrate Technology

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Statement of the Problem

As students continue to work on their 21st century skills, school administration will need to support a school environment that develops student and teacher digital and media literacy.

When students and staff are digitally literate, they are able to understand, use, and safely interact with technology and media resources in the classroom and beyond (Hobbs, 2011). Digital and media literacy translates to improved use of technology tools and student achievement.

The effectiveness of a technology tool relies heavily on the classroom instructional strategies and norms for student learning and behavior within the school. However, majority of schools have ineffective student handbook policies on technology, and classroom management and instructional practices that discourage students from being an empowered learner, creative communicator, and global collaborators. In many school settings, there is a gap in how students can demonstrate their learning in a variety of ways with the use of technology, and how teachers can align effective classroom rules and curriculum with school-wide technology expectations.

Review of Literature

Integrating technology in education can play an important role in student productivity and instructional effectiveness. The teachers who learn to integrate technology into existing curricula teach differently than teachers who did not have such training or support from their school institution (Christensen, 2002). Although many educational systems have rapidly embraced digital technologies, the effective inclusion of these technologies into teaching practice has encountered, and continues to encounter, practical and pedagogical barriers (Wood, Specht,

Willoughby, & Mueller, 2008). Teachers' personal experiences with technology, as well as previous successful instruction with technology, are important factors in determining technology usage (Hughes, 2005). Technology is more likely to be used when it allows teachers or students to be more efficient in completing a task (Ruthven et al., 2004). Moreover, technology is also likely to be successfully used when teachers understand how the specific technology enhances instruction and provides individualized support for struggling or advanced students (Ruthven et al., 2004).

Maximizing the use of technology in Islamic schools offers teachers, students and administration an opportunity to advance learning of language, religion, and general education. Students are able to practice digital citizenship with Islamic etiquette and guidance as they learn and apply their 21st century skills in school and home settings and beyond. When each of these factors are met, technology implementation is more likely to lead to improved teacher instruction, and student learning and behavior (Hughes, 2005).

Additionally, the need for effective use of technology in the classroom and at the school level is critical for student achievement and confidence. Educators promote the use of technology in education in a variety of ways, but some educators at the classroom level and school as a whole are still having problems with integrating technology into the school's curriculum and routines. Technology should be viewed as one means of solving some of the problems that teachers face in their teaching and that learners face in their learning (Williams, 2000). Teaching with technology is not just about staying current on the latest tools. It is about knowing how to successfully incorporate technology into teaching and into the culture of the school with purpose and intent that aligns with the mission of the school. Technology integration depends on the

school and teachers' principles, available technologies, and expectations. For Islamic schools, the mission and philosophy of the school drives the principles and expectations that guide student learning and ultimately the success of integrating technology.

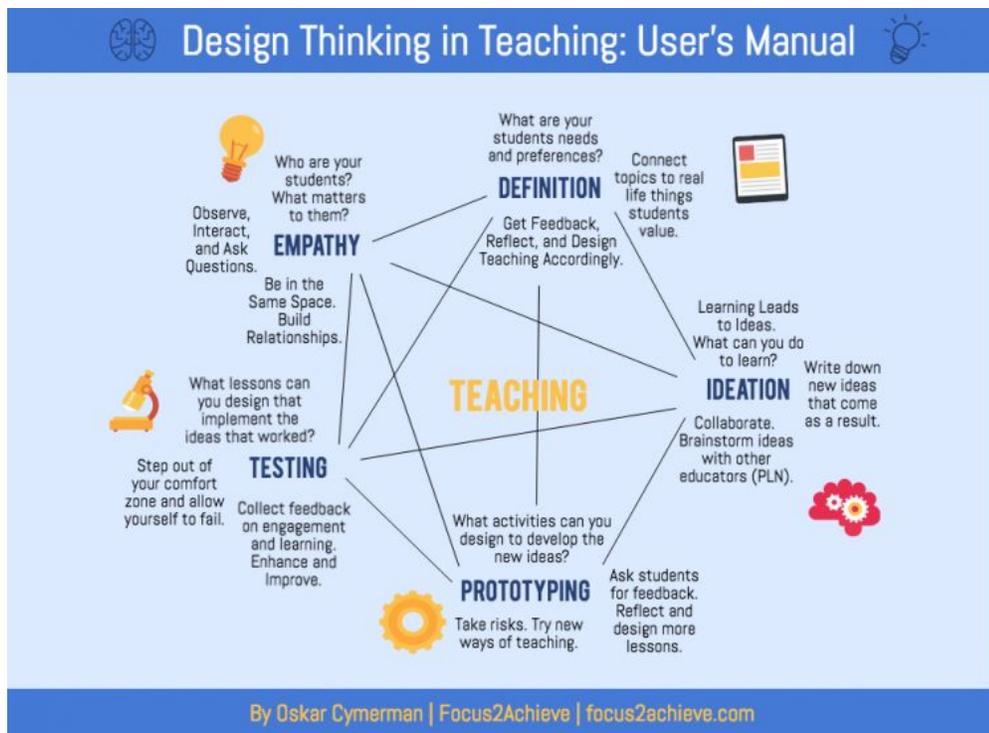
Methods

Behind every teachers' instructional strategy that attempts to integrate technology, there is a design thinking process and depth of knowledge that can close the gap and reduce barriers in learning. Teachers along with school administration should use a design process that encourages the adoption of technology as means to achieve their objectives, instead of technology being the outcome. For example, students can use a Google slide in their classroom, but how is the teacher's lesson design mediating learning? If students need to be able to communicate an idea, then is a Google slide an appropriate and effective technology tool to meet this objective? How would the teacher know? The answer is situated in the design approach that emphasizes digital and media literacy. In a design thinking approach, the teacher has to further question and connect not just the technology to the activity, but embrace empathy to ensure the class is student-centered and incorporate evaluation to assess the impact of the strategy on student learning. The teacher is positioned to ask how their classroom environment in the Islamic school reflects student-centered rules that encourage the use of technology that meet school and classroom expectations. Moreover, administrators such as instructional leaders and dean of students need to ask how the school policy in the student handbook will help students learn or hold them back. Administrators and teachers should ask: (1) how do all the pieces regarding technology leverage or hinder learning, and (2) how can a teacher and administrator be an agent of change through instruction and school culture and routines?

Recommendations of Practical Implementation

Design thinking in combination with the SAMR framework offer Islamic school teachers and administration guidance on how to approach integration of technology and expectations school-wide, within a classroom, and at the curriculum level with the adoption of ISTE technology standards. Moreover, the design thinking process situates the student at the center of the design to ensure learning and instruction is student-centered.

Design Thinking



integrate technology into the school's curriculum to allow students to apply computer and technology skills to learn and problem solve. Educational technology are the tools used to assist in the process of integrating technology and include devices and software applications that students use first hand such as computers, iPads, smartboards, and mobile devices.

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