Learner-Active Technology-Infused Classroom:

A Review of a LATIC Case Study and Discussion of Opportunities With Virtual Schooling

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ABSTRACT

With the continued rise of importance in developing digital learners, this article seeks to review a study centered on an example of innovative, technologically-advanced curriculum through the learner-active technology-infused classroom (LATIC) format as well as to discuss the possibilities of engaging learners in this format through virtual education settings. The LATIC approach pursues student achievement through three primary principles: academic rigor, student engagement, and student responsibility. In order to accomplish these goals, students are encouraged to work both independently and collaboratively, to use technology seamlessly as a tool for learning, to set goals, manage projects, assess progress, and identify their own resources for learning. In the midst of the COVID-19 global crisis and its tremendous impact on learning, this article first reviews the original case study of a 3rd-grade LATIC and then further discusses the potential for incorporating these concepts into online and homeschool education.

KEYWORDS

COVID-19, E-Learning, Elementary Education, Homeschool Education, Qualitative Case Study, Technology Education, Virtual Learning

INTRODUCTION TO LATIC AND THE CASE STUDY

With the continued rise of importance in developing digital learners, this article seeks to review a study centered on an example of innovative, technologically-advanced curriculum through the Learner-Active Technology-Infused Classroom (LATIC) format as well as to discuss the possibilities of engaging learners in this format through virtual education settings. The LATIC approach pursues student achievement through three primary principles: academic rigor, student engagement, and student responsibility (Sulla, 2013). In order to accomplish these goals, students are encouraged to work both independently and collaboratively, to use technology seamlessly as a tool for learning, to set goals, manage projects, assess progress, and identify their own resources for learning. In the traditional classroom setting, teachers differentiate instruction in order to reach the learning and growth needs of each individual student, specifically in preparing digital learners for the future of educational landscapes and the modern workplace. Further, each LATIC may look and feel different, depending upon the student culture and learning environment the teacher has chosen to model and develop. Therefore, in the midst of the COVID-19 global crisis and its tremendous impact on learning,

this article first reviews the original case study of a LATIC and then further discusses the potential for incorporating these concepts into online and homeschool education.

Moreover, while differences in structure are inherent with the LATIC format, this case study aimed to explore the specific application of LATIC curriculum in a 3rd grade Title 1 classroom in Southwest Florida. The case study focused on: 1.) the intended and achieved learning outcomes of the curriculum; 2.) student engagement with their peers, teacher, and technology; 3.) and experienced successes of both the students and teacher as well as any challenges faced during the LATIC implementation process. Further, the purpose of this research was to experience the day to day functions of a LATIC in order to evaluate its appropriateness for learners of varying levels, backgrounds, socio-economic statuses, and ages.

Despite the noted perceived benefits of a LATIC curriculum, there is a current lack of research in the literature either supporting or challenging this specific approach to teaching and learning and more specifically the use of this approach in developing digital learners. Therefore, this article seeks to contribute to the literature on technology-enhanced education, global education initiatives, and pedagogical approaches intended to expressly reach digital learners. Additionally, due to the rapid and unexpected impact of COVID-19, there is currently a lack of literature on the impact of this current health crisis on education. Thus, this article aims to further explore the potential for both educators and parents to create LATIC based learning in the virtual school setting in order to engage students while instruction takes place out of the classroom.

Theoretical Framework and Review of the Literature

This study was framed through Vygotsky's (1978) theory of social constructivism and concept of Zone of Proximal Development as well as through Gardner's (1999) Multiple Intelligence Theory (MIT), which will all be explored in more detail. Further, the LATIC formula itself will be described as a means of providing a theoretical framework for the student, in addition to pertinent characteristics of LATIC, namely student-centered learning, the digital generation, and differentiated learning.

Theory of Social Constructivism and Concept of Zone of Proximal Development

The LATIC structure has its roots in Vygotsky's (1978) Zone of Proximal Development (Sulla, 2013) as well as in his theory of social constructivism. Vygotsky noted through the Zone of Proximal Development (ZPD) the value of students "problem solving under adult guidance or in collaboration with more capable peers" (p. 86). His work highlighted the importance of social interaction in the classroom and argued that students need help mastering new skills or material from either their classroom teacher or a peer. Moreover, his theory of social constructivism specifically emphasized the collaborative nature of learning and acknowledged the role of language and culture in cognitive development. Further, Wass, Harland, and Mercer's (2011) research indicated that while curriculum planning and course activities are important in scaffolding the development of critical thinking, less formal or unplanned social experiences are also essential. For example, peer support, peer and teacher conversations, and teachers serving as a role model for classroom learning are all important components that lead to student learning, engagement, and critical thinking. The LATIC structure supports this notion through its emphasis on peer to peer collaboration and support in pursuit of knowledge.

Multiple Intelligence Theory

In addition to Vygotsky's (1978) ZPD and his theory of social constructivism, the theory of multiple intelligence also plays a factor in the design and structure of LATIC. Gardner (1983) described intelligence as "the ability to solve problems, or create products, that are valued within one or more cultural settings" and as "the capacity to respond successfully to new situations…to tackle a task demanded by life" (p. 8). Further, Gardner argued that educators should consider intelligence as more than the purely cognitive and instead should consider the affective and emotional sides of intelligence (Gardner 1983 a,b & Gardner 1995). Specifically, as his model has developed over time, Gardner's

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