

Chapter 14

TACTivities:

A Way to Promote Hands–On, Minds–On Learning in a Virtual Learning Environment

Angie Hodge-Zickerman

Northern Arizona University, USA

Eric Stade

University of Colorado, Boulder, USA

Cindy S. York

Northern Illinois University, USA

ABSTRACT

The need to keep students engaged is particularly acute in virtual environments. In this chapter, the authors describe TACTivities (learning activities with tactile components), designed to help encourage student participation, collaboration, and communication. Originally developed for in-person instruction, TACTivities are readily adaptable to online learning environments. TACTivities are intended to foster a sense of play, creative problem-solving, and exploration among the students who undertake to complete these tasks, and also among the teachers who design them. Unlike other tactile learning ventures, which may involve various kinds of physical props, TACTivities entail only moveable pieces of paper, or electronic equivalents. This feature means that TACTivities are quite portable, and they are easily implemented, shared, and modified (particularly in remote settings). Further, TACTivities allow for inclusion of discipline-specific content, language, and formalism, while still cultivating physical engagement in problem-solving and critical thinking in any subject area.

INTRODUCTION

K-12 teachers must make decisions in their classroom on a daily basis to help their students learn. Pedagogical reasoning (Niess & Gillow-Wiles, 2017) and technological pedagogical reasoning (Smart et al., 2016) help teachers make such decisions in their classrooms. One way to make such decisions is that

DOI: 10.4018/978-1-7998-7222-1.ch014

K-12 teachers often use hands-on activities and manipulatives to cultivate creativity and playfulness in the classroom, and to engage their students in the learning process. Indeed, engagement (Claxton, 2007), creativity (Beghetto et al., 2015; Bourdeau & Wood, 2019; Cooper & Heavenlo, 2013; Nadjafikhah et al., 2012), and playfulness—especially creative play (James & Nerantzi, 2019; Michelman, 1971; Russ, 1998; Singha et al., 2020), have all been identified as key factors influencing student learning.

When K-12 students have something to do with their hands, they are likely to naturally play with that object and figure out how it works – whatever it may be. Remember Fidget Spinners? They were advertised as a way to provide students something to do with their hands that was quiet and not distracting (more specifically they were advertised for students on the autism spectrum, with attention deficit hyperactivity disorder (ADHD), stress, or anxiety) (see Schecter et al., 2017 for more information). So why not have those random objects in the students' hands to serve a purpose and a so-called solution to a problem the students did not even know existed, or multiple solutions to really get their brain juices flowing? Such approaches have been implemented in face-to-face environments; now the challenge is to find ways to apply similar approaches to help engage students in the online context. Teachers who are teaching in an emergency remote environment are faced with the challenge of how to motivate and engage their students without being able to provide them with concrete items that help students be actively involved in the learning process.

Many teachers around the world have turned to emergency remote teaching on virtual or online platforms due to the COVID-19 pandemic. It has been reported that the online platform is proving to be frustrating and/or boring for K12 students and teachers alike (Dhawan, 2020; Lake, 2020), mostly because the existing curricula were not intended to be taught in an online manner (Hodges et al., 2020). Remote emergency online teaching is not the same as planned online classroom teaching (Hodges et al., 2020), activities are different and student attention span is different. Some children (and adults) can spend hours playing video games in front of a computer but are not able to spend more than an hour or two in front of a remote online classroom. It is pretty obvious why – because the classroom is boring and they are just listening and maybe doing a little talking, whereas video gaming is active, fun, and action-packed time. So how can the monotony of the remote classroom environment be changed, and pedagogical reasoning be used to make teaching decisions in a digital age (Starkey, 2010)? The authors of this chapter believe they have found one solution to increase student and teacher engagement and help make online learning more fun. The suggested learning activities have already been implemented effectively in face-to-face classes, and as the third author has said many times to the first author, “tell me something you do face-to-face and I’ll help you figure out how you can do it online” (personal communication, 2017). In fact, all three of the authors are now, of necessity, experienced at figuring out how to do something online that they typically do in a face-to-face classroom, as are many other teachers who have had to teach online because of COVID-19.

That said, many K12 teachers do not have the experience or know-how to figure out how to do some of the hands-on activities they typically do in a face-to-face classroom, in an online classroom. Activities might not look exactly the same, but the authors believe that with a bit of creativity, this type of learning can still be accessible in online classrooms. That said, with emergency remote teaching, sometimes the best a teacher can do is try to replicate online what they do face-to-face; the authors believe this is acceptable in the age of COVID-19. However, true online teaching should examine school reform over merely replicating a face-to-face classroom; see Cuban (2013) for more information on school reform.

In this chapter, the reader is provided with one way in which K12 teachers can still provide their students with these hands-on experiences in the online classroom using tactile learning activities that

17 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:

www.igi-global.com/chapter/tactivities/284529

Related Content

Elementary Students' Mathematics Curiosity: A Comparative Pedagogy of Face-to-Face, Online, and Blended Modes

Arnab Kundu and Tripti Bej (2022). *International Journal of Virtual and Personal Learning Environments* (pp. 1-16).

www.irma-international.org/article/elementary-students-mathematics-curiosity/313413

Information and Communication Technology (ICT) Adoption in Higher Education

Samuel NiiBoi Attuquayefio (2022). *International Journal of Virtual and Personal Learning Environments* (pp. 1-21).

www.irma-international.org/article/information-communication-technology-ict-adoption/295309

The Centralisation Dilemma in Educational IT

Martin Weller (2012). *Virtual Learning Environments: Concepts, Methodologies, Tools and Applications* (pp. 1550-1558).

www.irma-international.org/chapter/centralisation-dilemma-educational/63209

Teaching Students With Learning Disabilities in a Virtual Learning Environment

Pankaj Khazanchi, Rashmi Khazanchi and Simran Randhawa (2021). *Handbook of Research on Transforming Teachers' Online Pedagogical Reasoning for Engaging K-12 Students in Virtual Learning* (pp. 19-41).

www.irma-international.org/chapter/teaching-students-with-learning-disabilities-in-a-virtual-learning-environment/284516

Killing the "Quit Point": Constructivist Instructor Collaboration to Increase Student Retention

David Becker (2014). *Building Online Communities in Higher Education Institutions: Creating Collaborative Experience* (pp. 293-310).

www.irma-international.org/chapter/killing-the-quit-point/100596