Technologies and Creative Learning

Sharon Mistretta[*]

Faculty Adjunct, Johns Hopkins University School of Education, Baltimore, Maryland, USA
[*]Correspondence: E-mail: cottagetechnology@gmail.com

Welcome to a special issue of the IntechOpen AI, Computer Science, and Robotics Technology journal regarding technologies and creative learning. Creativity in educational settings resides at the intersection of stakeholders' creative identity, affordances to engage in lessons infused with multiple means of representation, and effectivities in students' environments that foster alternative assessments. An examination of the three components of creative identity, affordances, and effectivities leads the reader to the heart of the collection of articles in this special edition of Technologies and Creativity Learning (TCL).

1. Creative identity

Lebuda and Csikszentmihalyi [1] offer five non-overlapping viewpoints of identity to underpin creative endeavors. The first viewpoint is a commitment to potential, where creative ability is regarded as a gift. Typically aligned with neurodivergent students who are selected as "gifted" and "talented," creative affordances that align with gifted programs skew toward Asian, White, and upper socioeconomic status (SES) learners that provide them with the faculty, resources, and settings to nurture their creative endeavors. The underrepresentation of Blacks and Hispanics in gifted programs is still evident when schools take students' creativity into consideration in addition to test scores [2]. The TCL special edition invites authors to examine access to creative technology opportunities by marginalized students through the lenses of diversity, equity, and inclusion (DEI), to serve neurotypical and neurodivergent students and learners.

Eminent creators embody the second identity viewpoint, where individuals hold a positive, creative self-concept and persevere through challenges. While Lebuda and Csikszentmihalyi [1] studied artists and scientists, one could make a compelling argument that teachers and their students work together to overcome the challenges of hybrid learning environments to develop and sustain learning through creative technology platforms. The TCL special edition seeks articles that address creative technology solutions in open campus, hybrid, and extended remote learning.

Identity aligned with an occupation represents the third viewpoint where artists, authors, and, authentically, teachers embody their occupation in all situations. We are teachers within our classroom walls and throughout our lesson planning,

grading, and resource preparations that become woven into our personal lives. The TCL special edition invites authors to examine technology-based creative teaching methods and alternative assessments that align with the tenets of Universal Design for Learning and students' multiple means of engagement.

The fourth viewpoint of creative identity describes demanding professions that mandate creativity but require resilience to overcome challenges without guaranteeing success. A focus on social-emotional learning and mindfulness is needed to navigate complex school environments through creative solutions to address the importance of affective environments and connections to the brain, working memory, learning, and mindfulness. The TCL special edition seeks articles that address brain-targeted teaching through gamification, movement, and classroom robotics as embodied agents.

The fifth viewpoint of creative identity is considered an "additional" activity that is ephemeral and detached from daily activities. After-school programs, such as robotics teams, and computer programming clubs, augment the curriculum when schools lack the time and resources to facilitate authentic STEM programs during the school day. The TCL special edition invites authors to examine after-school and supplementary technology programs that foster creativity.

2. *Affordances*

An affordance is a relationship between an individual and their environment that contains perceived action possibilities [3]. Teachers look for feasible technology affordances to enact in their environment [4]. However, the "next best technology tool" mandated by schools can leave teachers unprepared to properly integrate the new technology tool into their lesson plans and teaching methods. The TCL special edition seeks articles that examine how the Technological, Pedagogical, and Content Knowledge (TPACK) framework [5] can assist administrators and teachers in providing professional development that addresses gaps in teachers' knowledge about technology integration.

3. *Effectivities*

Effectivities are the bridges from affordances to actions. Teachers who have honed their skills at the intersections of Technological, Pedagogical, and Content Knowledge can create engaging lesson plans that address students' creativity to develop interest, purpose, motivation, and self-regulation to perceive their environment through multiple means of representation and expression. The TCL special edition welcomes articles about the creative use of technology in the classroom, especially as alternative assessments.

References

1 Lebuda I, Csikszentmihalyi M. Me, myself, I, and creativity: Self-concepts of eminent creators. In: Karwowski M, Kaufman JC, editors. *The creative self: Effect of beliefs, self-efficacy, mindset, and identity*. London, England: Academic Press; 2017. p. 137–152.

2 Grissom JA, Redding C. Discretion and disproportionality: explaining the underrepresentation of high-achieving students of color in gifted programs. *AERA Open*. 2016;**2**(1):1–25. doi:10.1177/2332858415622175.

3 Gibson JJ. *The theory of affordances*, vol. 1(2), Hilldale, USA: 1977. p. 67–82.

4 Gee J. Sociocultural perspective on opportunity to learn. In: *Assessment, equity, and opportunity to learn*. Cambridge: Cambridge University Press; 2008. p. 76–108. doi:10.1017/CBO9780511802157.006.

5 Koehler MJ, Mishra P, Cain W. What is technological pedagogical content knowledge (TPACK)? *J Educ*. 2013;**193**(3):13–19. doi:10.1177/002205741319300303.