

Impacts of STEAM Maker Instruction on Socioemotional Skills Aptitude in Multicultural and Ethnically Diverse Undergraduate Settings

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DESCRIPTION

STEAM Maker Instruction (SMI) is integrated into STEM across organizational, disciplinary, cultural, linguistic, and organizational boundaries based on real-world business projects. This educational and cultural option helps students pursue projects of authentic social and cultural significance. In traditional college classroom settings, information between groups or individuals is often not fully connected to colleges and communities. Through real business projects as a link, students or organizations from a variety of backgrounds can serve as “bridges,” gaining social capital and special knowledge advantages. In this community of teaching and learning, SMI demonstrates a strong relationship between social presence and student learning outcomes, focusing on critical thinking, communication, collaboration, and creativity. These outcomes are also critical domains of socioemotional skills that foster crucial competencies in individuals’ careers and living. Therefore, SMI is designed to build on the insight that knowledge and action function in tandem rather than independently. Educators should focus on important content and how students learn different kinds of content using the STEAM pipeline, workforce development, and inquiry-based education. Creativity in science education has produced promising results in student motivation, bringing design thinking and the virtual world into SMI. It helped bridge knowledge, thinking, action, collaboration, and monitoring, and improved learners’ self-efficacy and creativity by supporting interdisciplinary knowledge and special competencies. Self-efficacy, defined as the ability to perform a given task successfully, is an element of intrinsic motivation that is highlighted as an essential predictor of academic performance and a leading non-cognitive construct. However, schools have been accused of failing to cultivate creativity and recognize that openness is essential for generating ideas. Schools, as psychosocial surroundings, should seek to foster socioemotional skills.

Socioemotional Skills (SMS) cover multiple domains, including social, emotional, personality, behavioral, attitudinal, self-

efficacy, personality, the Big Five, and creativity. The OECD definition holds that SMS includes character skills, moral character, 21st-century skills, and life skills. These skills have the following four categories: (a) cognitive skills for analyzing and using information, (b) personal skills for developing personal agency and managing oneself, (c) interpersonal skills for communicating and interacting effectively with others, and (d) social-emotional skills that are strongly related to school performance [1-4]. Similarly, many SMT curricula are designed as a series of courses; however, alternate curriculum designs would better prepare students to actively participate in multidisciplinary projects driven by acute business problems. Assessments that measure student growth rather than knowledge acquisition can foster the development of socioemotional skills during the learning process. Turning schools into social and emotional learning hubs requires a holistic approach that promotes skills on many fronts. A whole-school approach that builds on partnerships with parents, community, and other stakeholders plays a key role in successful social and emotional education.

Socioemotional skills are supposed to help balance anxiety and aspiration among those learning business knowledge. SMT educators make business classrooms more attractive, increase creativity, and encourage the application of creative and critical thinking in real-world business problems. Bridging “boring knowledge” with creative brainwork may help overcome the existing creative gap. Socioemotional skills need an environment that offers space for self-regulation and self-responsibility to support creativity and these, as recognized, are competences that promote business lesson environments and are widely recognized as fostering learning. However, socio-emotional skills usually innovate under project circumstances. To indirectly verify the sustainability of SMT training in business lessons, this study conducted three arrangements to ensure that SMT training was neatly integrated into undergraduate ESP classes. First, the participants were given complete learning material on the topic for the entire school year. Second, subject training in business was not part of the regular curriculum. Third, educators considered teaching interventions to be the best-competing

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concepts. Given these factors, the 5E conceptual pedagogical model was used to intervene in STEAM Maker business projects.

This research explored SMI business projects that included complete learning material for a school year. By working through the 5E model, educators learned about both the subject matter and SMT's creative approach. Business is currently the selective course of the school syllabus, and participating educators collaborated to learn the content they would be responsible for [5]. This meant that SMT did not compete with other learning concepts, which ensured that educators followed the students' business plan guide and flexibly used the prepared learning material. When working through the model, educators became accustomed to SMT and began to see how it could be incorporated into their lessons. The deliberate intervention adopted in the 5E Instructional Model, which consisted of engagement, exploration, explanation, elaboration, and evaluation, was concretely embodied in the creativity-based pedagogical framework within the creation project. Inquiry-based learning was strongly emphasized, along with features such as dialogue, risk, immersion, play, and an interdisciplinary framework. The implementation of these features helps to ensure that science learning and the learning process inspire and engage teachers and students. A series of activities that used inexpensive everyday materials suited to business lessons was then applied.

Providing space for socioemotional skills requires a social environment in which students can imagine, explore, experiment, test, manipulate, take risks, speculate, and make mistakes. In such environments, students can consider ideas or theories from different perspectives and have the opportunity to create innovative ideas based on their own experiences. Teachers were encouraged to adopt the role of tutors and advice on cooperative work, interaction, and inquiry-based learning, while maintaining responsibility for the well-structured learning environment provided by the lesson modules. These modules gave students self-responsibility and provided a space where they could develop self-efficacy in dealing with problems and scientific questions.

A successful SMI offers a learning environment in which learners can develop socioemotional skills without experiencing stress. Students' self-efficacy and self-confidence must be encouraged in colleges to maintain their motivation and willingness to participate actively in business. Business knowledge transfer should not be overemphasized and self-confidence should be stressed instead. Although SMT may not have fostered learners' interest in an international business career, it may have provided students with general motivation. Similar results were found for creativity, where the strongest determinants preceded intervention. This shows that students' already developed components determined both motivation and creativity, but did not affect the attitudes students developed through maker education. Although we could provide evidence that regular Maker-style learning fosters students' ability to engage in creative thinking processes, self-efficacy derived from earlier experiences seems to have profoundly influenced their

motivation and creativity. Therefore, it appears to be a promising and sustainable higher education approach that can promote autonomy and creativity, as long as it is iterative and not simply a deliberate intervention. Therefore, SMI might promote undergraduate autonomy and creativity much earlier and do it more regularly. Socioemotional skills provide a new understanding of multicultural classrooms and demonstrate how SMI can be integrated into undergraduate education [6].

CONCLUSION

STEAM Maker teaching enhances students' socioemotional skills and requires a stress-free learning environment that encourages self-efficacy and confidence. Prioritizing these qualities is essential not just for knowledge transformation. These findings have important implications for education. Although this study had a limited sample size and focused on a specific field, the results showed that SMI had a significant short-term effect on improving socioemotional skills. However, cultivating these skills is a long-term process that requires continuous intervention and practical applications. Future research should investigate the long-term impact of SMI on socioemotional skills through longitudinal studies to understand its influence on students' career development and quality of life after graduation. SMI is an effective educational model that is applicable beyond business education to other disciplines. In STEM education, SMI can be combined with real-world engineering problems to foster innovative thinking and develop practical skills. In the humanities, it can integrate interdisciplinary projects to help students apply knowledge. SMI can also be combined with emerging technologies such as online education and virtual reality to provide richer learning experiences. Teachers should encourage group business projects, facilitate communication, and promote creative expressions. Developing business contexts and establishing a flexible evaluation system to monitor student progress is essential. Nurturing students' independence, openness, and learning resilience is vital in preparing them for future uncertainty.

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