Chapter 15
Developing Personalized Teaching of STEAM-Arts Topics Project Based in Higher Education Environment:
Case Study at Saigon University, Ho Chi Minh City

Minh Hong Hanh Cao
https://orcid.org/0009-0002-8828-736X
Saigon University, Vietnam

ABSTRACT

Personalized learning has gained prominence due to diverse learning environments and individual learning styles. This study explores the practical application of personalized learning in university-level fine art education through the STEAM (science, technology, engineering, arts, and mathematics) approach. An experiment was conducted in a fine art class at Saigon University, Ho Chi Minh City, aiming to evaluate the impact of STEAM education on students' ability to visualize learning concepts and to motivate personalized learning tailored to their specific abilities and needs. The experiment also sought to help students recognize the connection between academic content and real-world issues, encouraging the application of knowledge to solve social problems. Findings suggest that personalized learning, combined with the interdisciplinary STEAM approach, can positively influence learning outcomes and engagement among fine art students in a university environment.

INTRODUCTION

In the current higher-education landscape, there is a strong focus on equipping students with the knowledge and skills necessary to thrive in the rapidly evolving demands of the 21st century. Consequently, educational approaches that prioritize individual learners' needs and abilities, integrate interdisciplinary knowledge to solve complex problems, and leverage technology to enhance learning outcomes have

DOI: 10.4018/979-8-3693-7718-5.ch015

gained significant attention worldwide (Riel, 1999; Hysa, 2014; Joynes et al., 2019; Loc, 2023; Long et al., 2024). In Vietnam's education system, the fine art general program has recently been restructured to foster essential 21st-century competencies such as creativity, critical thinking, collaboration, and communication (Corbisiero-Drakos, 2021; Anh, 2022; Ministry of Education and Training, 2023). Building on these core values, fine art education must be tailored to accommodate learners' unique needs at various educational stages. This requires adapting instructional content and methods to align with the specific educational goals and diverse artistic skills of different learner groups. One effective strategy for achieving this personalization is to integrate Science, Technology, Engineering, Arts, and Mathematics (STEAM) education with personalized learning approaches (Taylor, 2016; Singh, 2021; Kam & Wong, 2022). Personalized learning in the context of STEAM enables students to engage with fine art in ways that resonate with their individual interests, learning styles, and strengths. This approach not only enhances artistic capabilities but also connects fine art with other STEAM fields, promoting a comprehensive educational experience that prepares students for interdisciplinary careers and real-world applications after graduation. To explore the impact of personalized learning methods on fine art education at the university level within the context of modern Vietnamese education, a project-based learning experiment was conducted at Saigon University in Ho Chi Minh City. This experiment combined STEAM educational strategies to organize learning activities for fine art pedagogical students. The assessment aimed to identify the key factors influencing personalized fine art education within a STEAM framework, ultimately proposing art-based topics for advancing fine art education that align with the demands of 21st-century learning.

BACKGROUND

The Development of Personalization in Visual Arts Education

Personalization in education is defined as organizing teaching based on students' individual needs, skills, and interests to promote deeper engagement and knowledge exploration (Dockterman, 2018; Yasar Akyuz, 2020). Personalized learning methods not only support the development of modern capacities for learners but also foster interactive relationships between teachers and students, creating effective learning experiences through diverse teaching models and modern technological support (Abedi et al., 2021; Makhambetova et al., 2021). During the late 2010s, several studies explored personalization in art education by implementing interactive learning environments that shifted the focus from teacher-centered to student-centered instruction across various teaching levels. This interactive approach encourages learners to share their personal perspectives, experiences, and interests, promoting deeper engagement and improving learning outcomes compared to traditional visual arts teaching methods (Hu, 2013; Stavridi, 2015; Tomljenović, 2015; Baratboyev et al., 2019; Maaruf et al., 2019). As a result, collaborative learning has emerged as a key strategy for supporting personalized art learning in the following aspects.

First, it addressed the limitations of traditional visual arts education by incorporating multimedia elements and interactive teaching methods that cater to learners' unique thinking patterns, learning styles, and individual needs. Art concepts that were once presented mostly through images or drawings are now accessible through a variety of videos, graphics, infographics, and interactive models, making educational content easier to understand and analyze. This approach also allows learners to absorb, interpret, and connect with learning materials in a way associated with their personal perspectives.