Chapter 14
Training Art Resources in the Context of the 4.0 Industrial Revolution and the Trend of Internationalizing STEAM Education:
Case Study at HUA

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ABSTRACT

The chapter will summarize the main findings from the study and propose some development directions for the art training model at HUA in the context of the Industrial Revolution 4.0 and the trend of internationalizing STEAM education. The combination of qualitative and quantitative research methods will help provide a comprehensive view of the training process at the university, thereby providing practical solutions to improve the quality of training and meet the increasingly diverse needs of the global labor market.

INTRODUCTION

Background and context. The Fourth Industrial Revolution is driving the rapid development of advanced technologies such as artificial intelligence (AI), automation, and the Internet of Things. It is transforming the way humans live, learn, and work. In the arts, traditional methods and tools must gradually adapt to these innovations to meet the demands of the times (Schwab, 2017). Science became a platform to promote the development of art. The combination of arts, science, and technology in the STEAM education model has become a global trend. STEAM not only focuses on developing creative thinking but also encourages students to think critically and solve problems by applying multidisciplinary

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methods (Maeda, 2013). In the context of internationalizing education, countries such as Vietnam are actively promoting this model to equip students with skills relevant to the 4.0 Revolution (Trowler, 1998).

The urgent need in Vietnam is to apply new technology to art teaching. Art training institutions need to improve their curriculum to ensure that students are able to use digital tools and develop creative thinking in a digital environment. However, the biggest challenge is how to balance the preservation of traditional art and the application of modern technology, thereby ensuring the sustainable development of Vietnamese art in the global context (Nguyễn, 2024).

The topic's challenge lies in enhancing the quality of art education amidst the 4.0 Industrial Revolution and the growing internationalization of STEAM education. The challenge for today's art colleges is to incorporate elements of science, technology, engineering, and mathematics into their curricula. It is difficult to meet the growing demands of the global labor market nowadays if it lacks of resources, modern teaching methods, and connections between schools and businesses.

Research Questions

RQ 1: How have the impacts of the Fourth Industrial Revolution and the trend of STEAM education impacted the methods and content of fine arts training in art education institutions?
RQ 2: What role do internationalization perspectives in STEAM education play in shaping fine arts training programs in developed and developing countries?
RQ 3: What role do international cooperation and sustainable ties between schools and businesses play in improving the quality of fine arts human resource training to meet the needs of the global labor market?

Research relevant. The research focuses on exploring the impact of the Fourth Industrial Revolution and the trend of internationalization of STEAM education on human resource training in the field of fine arts. This research includes an analysis of the integration of art and technology, an evaluation of innovative teaching methods based on digital technology, and an examination of the role of international cooperation and school-industry engagement in training high-quality fine arts human resources that meet the requirements of the global market.

LITERATURE REVIEW

1. Definition

STEAM. The STEAM (science, technology, engineering, art, and mathematics) education model has become an important educational framework. STEAM is a combination of subjects and creates an integrated approach to develop students' critical thinking and creativity Beers (2011). In this model, art plays an essential role, not only as a part of the training program but also as a bridge between different fields. Art helps students develop soft skills, including communication and teamwork skills, which are very important in the modern working environment (Sawyer, 2014). According to Ken Robinson (2015), art is creativity. It is a unique way of thinking, encouraging students to ask questions and find creative solutions to complex problems. Integrating the arts into STEAM curricula has also been shown to increase student engagement in learning (Winner et al., 2013). STEAM curricula in many schools