

Research on STREAM Interdisciplinary Education Under the Framework of Education for Sustainable Development

Kun Yi Chou* Shu Ching Yang**

Yi Fang Luo* Jia-Hong Lin******

STEM education, which initiately focused on a cross-field framework in education integrating science, technology, engineering, and mathematics, has gradually developed into STEAM by incorporating design, aesthetics, and humanities and arts, that later developed into STREAM by accommodating R (Reading and/or wRiting) elements further, highlighting the importance of literacy. From the stage of STEM to STEAM, then to STREAM, it shows that current education has begun to pay more attention to the role of art, humanities, and social sciences in the study of STEM. However, during pursuing economic prosperity, STEM gifted students should also consider their personal social responsibility for sustainable global development. Such an integration of humanities and arts into STEM now is believed to help enhance students' participation, creativity, innovation ability, problem-solving ability, and other cognitive advantages. This may bring new opportunities for STEM, combined with sustainable development education. After reviewing the past literature, the researchers elaborate the transformation of educational concepts and connotations from STEM to STREAM, as well as the notion of "STREAM learning to promote SDGs education." A course with a theme-base to illustrate how STREAM cross-domain education could be realized under the framework of sustainable development education is further recommended, followed by using the design thinking as an example of teaching strategy, with possible prospects proposed for the future.

Keywords: STEM, STEAM, STREAM, Cross-field education, Sustainable Development Goals, Education for Sustainable Development

永續發展教育架構下 STREAM 跨領域教育之探究

- * Kun-Yi Chou, Ph.D. Candidate, Institute of Education, National Sun Yat-sen University
- ** Shu-Ching Yang, Professor, Institute of Education, National Sun Yat-sen University
- *** Yi-Fang Luo, Postdoctoral researcher, Center for Teaching and Learning Development, National Kaohsiung University of Science and Technology
- **** Jia-Hong Lin, Ph.D., Institute of Education, National Sun Yat-sen University

專論

Corresponding Author: Yi Fang Luo, e-mail: a0989909301@gmail.com