



Integration of 21st Century Skills into Science Instruction: A Case Of Early Childhood Teacher Education

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Abstract

In today's highly competitive global economy, learners should not only attain a subject-level mastery but also possess a wide variety of advanced skills like system thinking, self-management, creativity, communication, critical thinking. These abilities are crucial for all stages of professional advancement, from teaching to engineering. The 21st century schools should support learners' acquisition of those advanced skills, "21st century skills" to fulfil the intellectual demands of 21st century work.

With this respect, this study aims to assess learners' 21st century skills using multiple sources of data. 21st skills were integrated into a science methods class for early childhood teachers in Fall 2009 and then assessed both using a scale-based instrument and case-based learning activity. 21st century skills herein include communication, social responsibility, critical and system thinking, information and media literacy, problem solving, creativity and intellectual curiosity, interpersonal and collaborative skills, self-direction, and personal responsibility and adaptability. Sixty seven pre-service teachers indicated the level of 21st skills they have already had and their perceptions on importance of each skill on the scale. Their scale scores were then related to their reflection and the performance on a class activity. These findings will be discussed in connection with science teaching and learning in the context of early childhood education. Furthermore, considering the fact that the concept of 21st century skills is a relatively novel and much argued phenomenon in the field, this study will provide information on validity and reliability of a measurement scale that could be utilized in future research on a different sample.