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Developing Astronomy Activities for Young Children: Initial Assessment Outcomes of a Blended Learning Course

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Abstract

Curricula worldwide are actively promoting astronomy education. Exploring phenomena such as the cyclic transition between day and night, the interplay of light and darkness, the presence of shadows, and the force of gravity offers many chances for young children to uncover the workings of the natural world and acquire knowledge of the scientific process of investigation. Nevertheless, research indicates that instructors often possess misunderstandings, have a deficiency in fundamental knowledge and comprehension, and, to a certain degree, display hesitancy in organising and facilitating astronomical activities inside their classes. To meet this important need, we have developed a blended learning training programme designed to provide teachers with fundamental understanding of astronomy and the necessary pedagogical content knowledge to effectively teach astronomy subjects at the preschool and early elementary school levels (Year/Grade 1, 2, 3). We used our hybrid educational programme to instruct experienced educators and aspiring instructors. In order to evaluate and enhance this training programme, we used questionnaires and conducted interviews. This document presents the findings of the preliminary evaluation. The results demonstrated improvements across all aspects, including the participants' domain knowledge and the pedagogical content knowledge required to effectively design and execute astronomy activities for young children. The findings further demonstrated a notable improvement in the participants' attitudes, perspective, and instructional choices for astronomy. Ultimately, this evaluation has identified many areas for improvement that will be presented and deliberated upon.

Keywords: astronomy, blended learning, content knowledge, pedagogical content knowledge, young children