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Reflective Depth in Multimodal Messenger-Based Reflection

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Abstract

This study explores reflective depth in traditional written and messenger-based multimodal reflection within STEAM higher education courses. The study comparatively examines reflective characteristics across Moodle-based written reflections and Mobile Instant Messenger (MIM) based multimodal reflection environments within four STEAM innovation management courses. The cases shared reflective learning objectives but differed in reflection prompts, learning contexts, and degrees of reflective scaffolding. Reflections were analyzed using a qualitative coding framework adapted from Mezirow's transformative learning theory and Kember et al.'s reflective thinking categories, including content, process, and premise reflection. Preliminary findings suggest notable differences in the character of reflection across the two environments. Moodle-based reflections tended to be longer and more focused on the learning content. In contrast, messenger-based multimodal reflections demonstrated greater immediacy, visual engagement, and variability, ranging from non-reflective captions and associative comments to more analytically developed reflections. However, many MIM-based reflections remained fragmented or insufficiently elaborated, limiting deeper reflective processes such as critical reasoning and examination of assumptions. More developed MIM reflections tended to emerge in structured reflection format, suggesting that pedagogical scaffolding may play an important role in supporting reflective depth within multimodal environments. Overall, the findings suggest that MIM-based reflection may change the character of reflection toward more experiential, expressive, and associative forms. The paper contributes to discussions on multimodal pedagogy, reflective learning, and digital learning environments in higher education.

Keywords: Reflective Learning, Multimodal Reflection, Mobile Instant Messengers (MIM), STEAM Education, Reflection Depth