Identification of Sequential/Global Learning Dimension in FSLM Model via Game-based Activities

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The current primary school cohort, known as Generation Alpha and born after 2010, has extensive access to mobile devices and gaming. Using a uniform teaching method might not be as effective, given the diverse individual learning preferences present. Research shows that adaptive learning tailored to a student's learning style (LS) can yield positive outcomes. Yet, conventional techniques for identifying learning styles, like questionnaires and self-assessments, can be time-consuming and discouraging, especially for primary school students. The Felder Silverman (FLSM) model, known for its effectiveness in technology-enhanced and e-learning, comprises eight distinct learning dimensions. However, the complexity of the FSLM questionnaire makes it impractical to directly apply the same questionnaire in its original format to identify the learning styles of primary school students. The objective of this study is to suggest a game-based activity aimed at recognizing the Sequential/Global learning dimension in the FSLM questionnaire. The proposed game activity involves a reading game that details the step-by-step process of constructing a boat, segmented into ordered sections. During this reading activity, students are tasked with recognizing the tools and equipment utilized in various stages of the boat-building process. In the subsequent level of the game, students are prompted to choose the suitable materials for each phase of boat construction. Throughout the game, various in-game parameters such as activity completion time, active and idle time, sequence of equipment selection, and correctness of equipment selection, will be gathered while the student engages in gameplay. Initial findings suggest that the game surpasses the original ILS questionnaire in terms of student interaction and enthusiasm for completing LS activities, achieving an overall satisfaction rate of 87.5%. The in-game parameters are anticipated to be utilized within a fuzzy logic system, streamlining the forecast of a student's sequential/global learning dimension.

Keywords: *Felder silverman, Game design, Learning style, Primary education*