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**Fundamental fraction knowledge of preservice elementary teachers: A cross-national study in the United States and Taiwan.**

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Summary: The purpose of this paper is to show the similarities as well as the differences of fundamental fraction knowledge owned by preservice elementary teachers from the United States ( $N = 89$ ) and Taiwan ( $N = 85$ ). To this end, we examined and compared their performance on an instrument including 15 multiple-choice test items. The items were categorized into four different types of fundamental fraction constructs, including part-whole relationship, quotient, equivalence, and meanings of operations. Each item was embedded in the area, linear, or set model except for the items constructed out of the meaning of operations. Several items were featured with a pictorial illustration. Quantitative analysis showed that U.S. preservice teachers were significantly outperformed by their Taiwanese counterparts overall. The difference between the two groups was statistically significant on 12 of 15 items. Findings suggest that preservice elementary teachers from both countries need to be better prepared in their understanding of the meaning of fraction multiplication or division operations. Findings also suggest that U.S. preservice elementary teachers need to be more knowledgeable in dealing with fraction problems embedded in a linear model. Further research is suggested to study the issues raised from the findings. (Contains 9 tables.) (ERIC)

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