

The Classification Ability with Naked Eyes According to the Understanding Level about Rocks of Pre-service Science Teachers

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This study aimed to investigate the classification ability with naked eyes according to the understanding level about rocks of pre-service science teachers. We developed a questionnaire concerning misconception about minerals and rocks. The participant were 132 pre-service science teachers. Data were analyzed using Rasch model. Participants were divided into a master group and a novice group according to their understanding level. Seventeen rocks samples (6 igneous, 5 sedimentary, and 6 metamorphic rocks) were presented to pre-service science teachers to examine their classification ability, and they classified the rocks according to the criteria we provided. The study revealed three major findings. First, the pre-service science teachers mainly classified rocks according to textures, color, and grain size. Second, while they relatively easily classified igneous rocks, participants were confused when distinguishing sedimentary and metamorphic rocks from one another by using the same classification criteria. On the other hand, the understanding level of rocks has shown a statistically significant correlation with the classification ability in terms of the formation mechanism of rocks, whereas there was no statically significant relationship found with determination of correct name of rocks. However, this study found that there was a statistically significant relationship between the classification ability with regard the formation mechanism of rocks and the determination of correct name of rocks

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