

一般論文

## デザイン性を加味した段ボール製火成岩・堆積岩標本セットの理科授業における効果

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### The Impact of Cardboard-Made Igneous and Sedimentary Rock Specimen Sets with Consideration for Design in Science Classes

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小・中学校における岩石の学習では、地層を構成する堆積岩や、マグマが冷えてできた火山岩・深成岩を観察する。実際の岩石を観察することが求められているが、生徒一人あたりの標本数が十分でない学校も少なくない。既存の岩石標本のほとんどは小さな木箱に収納された市販のものであり、生徒の学習意欲を強く刺激するものではない。本研究では、強い好奇心や興味を喚起するようなデザインの美粧印刷を施した、2種類の段ボール製岩石標本箱を作成した。岩石標本箱には、河川や海岸で採取した代表的な堆積岩や、火成岩を8種類ずつ詰め込んだ。岩石標本箱40セットを岐阜県内のいくつかの教育委員会に提供し、理科の授業で使用した。各クラスへの質問紙調査では、デザイン性の高いパッケージを使用し、一人1セットずつ配布したことで、岩石について楽しく学び、理科が好きな生徒だけでなく苦手と答えた生徒の学習意欲も高めることができた。

The study of rocks in elementary and junior high schools includes observation of sedimentary rocks, as well as volcanic and plutonic rocks. There is a shortage of actual rock specimens in many schools and recent reports have indicated that learning environment does not allow for sufficient time to carefully observe rocks. In fact, most of the existing rock specimens in schools are commercially purchased and stored in small wooden boxes, which may not strongly motivate students to learn. In this study, two types of corrugated cardboard rock specimen boxes with process printing cardboard were created. These designs were intended to spark curiosity and interest among students. The boxes were filled with eight kinds of representative sedimentary or igneous rocks, most of which were collected at riverbeds or shores in Japan. Forty sets of these rock specimen boxes were provided to several education boards in Gifu Prefecture and used in science classes. Questionnaire surveys conducted for each class revealed that providing one set of these attractive, well-designed package per student significantly increased students' motivation for learning. This effect was observed not only among those who like science learning but also among those who answered that they were not good in science.

キーワード：地学学習、岩石標本セット、美粧印刷段ボール箱、一人1セット、学習効果

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