

Yanaphat Promprasit 2011: Enhancing Students' Understanding of the Concepts of Species Diversity through Community Funds of Knowledge. Doctor of Philosophy (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Assistant Professor Naruemon Yutakom, Ph.D. 220 pages.

This research aims to develop teaching and learning species diversity based on community funds of knowledge to enhance students' understanding of species diversity concepts. This study has three phases. The first phase was to explore current situation in teaching and learning species diversity, students' understanding concepts of species diversity and existing situation of community funds of knowledge about species diversity in the students' community. The second phase was to design and develop a species diversity learning unit based on constructivist approach, socio-cultural perspective of learning, and community funds of knowledge. The last phase was to examine the impact of the implementation of the unit on teachers' teaching and students' learning. The learning unit was implemented by three biology teachers with one hundred and eight students in three secondary schools in suburban area of Ratchaburi province. Nine of the students were also selected purposively to be studied in depth concerning their development of species diversity understanding. The data collection used the surveys, observations and interviews to indicate students' learning based on the teachers' practice.

The findings indicated that the development of a species diversity learning unit which drew on community funds of knowledge enhance students' understanding of the concepts of species diversity. The implementation of the learning unit was used by each teacher based on their understanding in constructivist approach, community funds of knowledge, and socio-cultural perspectives of learning. The teachers, who understood in these approaches, were successfully intended and consistently implemented the learning unit. Their students understood and corrected their alternative conceptions and could apply species diversity knowledge to explain their community situation related species diversity. In addition, teacher's belief and content background was influenced on their implementation. School events and activities were the important causes of limitation of teachers' preparation to implement the learning unit.

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Student's signature

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Thesis Advisor's signature