

Krittianee Charoenloi 2014: The Development of Grade 9 Students' Scientific Literacy in the Topic of Heredity Using Socioscientific Issue-based Teaching. Master of Education (Science Education), Major Field: Science Education, Department of Education. Thesis Advisor: Mr. Sasithev Pitiporntapin, Ph.D. 162 pages.

This research aimed to 1) develop the scientific literacy of Grade 9 students in the topic of heredity using socioscientific issue - based teaching and 2) study the characteristics of Socioscientific issue-based teaching that helped the development of the scientific literacy regarding the topic of heredity of Grade 9 students. The study group included 17 Grade 9 students in the second semester at the 2012 academic year of a secondary school in Bangkok. The research instruments comprised the heredity lesson plans, scientific literacy tests, student journals, informal interviews, teacher's logs and videos. The researcher analyzed quantitative data by calculating frequencies and percentages, and qualitative data by content analyses.

The results revealed that 1) after learning by socioscientific issue - based teaching, most students had increased in sound understanding (SU) of every concepts, which included heredity, chromosomes, DNA and genes, the processes of inheritance, genetic disorders, genetic engineering, and cloning. These accounted for 47.06%, 47.06%, 35.29%, 70.59%, 47.06%, and 70.59%, respectively. 2) Most students, 70.59% of the total, participated in issues related to heredity. The participation of students was mostly at the family level, which accounted for 58.33%, followed by the family- local level, accounted for 1.64%, followed by the local level, accounted for 5.88%, but no students had participated at the national. Therefore, the characteristics of learning management with socioscientific issue-based teaching has effectively helped the development of the scientific literacy about heredity of Grade 9 students as follows: 1) providing opportunities of role playing for students, thus allows students to understand scientific concepts easier; 2) self-implementing through the process of teamwork helps students to adjust incorrect knowledge towards more accuracy; 3) stimulating by pictures that students do not commonly see in everyday life is able to stimulate their interest and leads to better question settings; 4) information search via internet supports the efficiency of learning management; and 5) using open-ended questions is able to develop evaluative thinking.

---

Student's signature

Thesis Advisor's signature