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発表内容の概要	<p>（日本語）</p> <p>日本の教員養成系大学の1年生を対象に、彼らが保持する科学観と技術観について調査を行った。その調査結果を、諸外国の科学教育や技術教育に関する報告書で見られる科学や技術の定義と比較した。また、大学生が保持する科学観の由来を教育的側面と歴史的側面から考察した。</p>
	<p>（英語）</p> <p>The study investigated Japanese preservice science and technology teachers' views on science and technology, and compared their views with definitions of science and technology found in international literatures on science and technology education. In addition, the teachers' views on science were interpreted from Japanese historical and educational perspective.</p>
	<p>グラフ・図・写真（発表の様子等）</p> 
成果の今後の活用等	現時点で次の2点の活用を考えている。1点目として、大学1年生が保持する科学観と技術観の実態を踏まえて、今後の講義内容を検討していきたい。2点目として、大学1年生だけでなく、大学4年生に対しても調査を行いたい。そうすることで、大学4年間を通じて大学生がどのように科学観と技術観を発展させていったのかを明らかにすることができると期待する。
その他参考となる事項	別添参照

Grade 10th Students' Scientific Argumentation Skills on Micro-plastic Waste

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This study aims to investigate a class of grade 10th students' scientific argumentation skills on a micro-plastic waste issue. Data were obtained from a situational-oriented test. The test has two sections. The first section provides a rich information regarding to the micro-plastic issue, both pros and cons. Another section is designed to probe students' scientific argumentation skills. In this part, the students are requested to response to three questions: 1) what is your claim on this issue? 2) What are evidences utilized for supporting your claim? And 3) what is your explanation for linking between claim and evidences? Students' answers to these questions were analyzed by critically examine structure of argumentation (claim, evidence, and justification) as well as argumentation quality. Findings show that, most students are able to make claims and choose specific information to support their claims. However, they lack of skills to analyze and elicit significance evidences from the data set to support their claims. The children tend to select only data that support what they value, instead of considering other alternative explanations. Some students struggle to construct sound reasoning for backing up their claims. Implications on these findings for environmental education will be discussed in our presentation.



Japanese Pre-service Science and Technology Teachers' Views on Science and Technology: Why are They Different from Those of Typical Definitions Found in the International Literature?

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The purpose of the study was to investigate Japanese pre-service science and technology teachers' views on science and technology using a text mining method (Higuchi, 2014). A questionnaire consisting of five general questions was administered to 62 initial-year pre-service teachers (38 science and 24 technology majors). While the first two questions asked their interests in science (Question 1) and technology (Question 2) by a 5 point Likert scale, the remaining three requested them to describe freely images of science (Question 3), technology (Question 4) and their mutual relationship (Question 5). The responses to Question 3 and 4 were analyzed by KH Coder. The responses to Question 5 were categorized according to the expressed relationships between science and technology. The results indicated that some of the pre-service teachers' views of certain aspects of science and technology were very different from those of typical definitions found in international literature (e.g., NGSS Lead States, 2013). Ogawa (1995) pointed out that culture and society affect the existence of science. The authors attempt to decipher the Japanese pre-service teachers' views from Japanese historical and educational perspective.



Scaffolding Grade 10th Students' Scientific Conceptions on Digestive System through the Lens of Epistemological and Affective Perspectives

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This study aims to elicit appropriate teaching strategies, under the lens of epistemological and affective perspectives, for scaffolding students' pre-instructional concepts on digestive system to