

The textual analysis of online debates and classroom discussion about socio-scientific issues in regard to opinion formation and decision-making

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This study implements science teaching based on socio-scientific issues (SSI) in an undergraduate lecture to compare discourse patterns found in the classroom and on the internet. The students are intended to learn the nature of science through discussions encouraged by a bottom-up dialogue known as 'snowballing'. Twenty-seven freshmen discussed the latest controversies such as the 'Toyota recall', global warming, and mad-cow disease in this spring semester. In case of the internet, online debates generated by ordinary people are investigated centering on 'mad-cow disease' in 2008. Some common discourse patterns in the classroom and on the internet are found and elaborated. Irrespective of the topic, considering the risk, people tend to object from a personal view, whereas the others try to accept the risk from a social view. Furthermore, on the internet, there are four salient categories to manage the risk: *minimal loss* to minimize the opportunity cost, *no loss* to avoid any kind of damage, *efficiency* to follow the controllable one in spite of the same expense and *certainty* to trust certain things even though they are more dangerous. The internet people do not allow an individual damage. On the contrary, some of the students are willing to take the risk for the others, not for themselves even though there are three categories out of the four: *minimal loss*, *no loss* and *efficiency*. With regard to the role of scientific knowledge to decision-making, people invariably rely on intuition and emotion to draw conclusions despite analyzing the same evidence. However, it is interesting to note that a key concept in science play a significant role to make a judgment of the risk size. Professional knowledge influences on persuasion and process of debate. Last, there are the differences between classroom and the internet in terms of the discourse style. While a prevailing attitude is found divisive on the internet, the classroom attitude consistently drifts to the neutral. Whereas the stances of online debates decreased in variety, the classroom

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stances increased did. It is concluded that the classroom discussion about a socio-scientific issue can contribute to help people more capable of judgment of different opinions. In order to understand the starting point of one's argument is related to his conclusion. We have to provide a chance to think an issue in a different way. Scientific knowledge is interwoven with individual decision-making. The ability to decision-making can be improved by different idea as a cognitive conflict in conceptual studies.