

2 - Learning Science: Cognitive, Affective, and Social Aspects | Empirical

SP - (15028) - HOW CONSTRUCTED EPISTEMIC EMOTIONS FACILITATED AN ELEMENTARY STUDENT'S PARTICIPATION PATTERNS IN SMALL-GROUP SCIENTIFIC MODELING

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Short Abstract

In this qualitative case study, we purposively selected a Korean female elementary student, anonymously named Susan, and explored which epistemic emotions she constructed during her participation in small-group modeling of the human respiratory system. With six lessons, students in small groups discussed and formulated arguments in order to construct a scientific model that will make them understand the organ structure mechanisms, and functions of the human respiratory system. Results from our data analysis using video-recordings, semi-structured interview guides, and emotion diaries showed that Susan constructed the epistemic emotions of *frustration*, *anxiety*, and *joy* while in the group. While frustration and anxiety were negative epistemic emotions which facilitated her non-participation and passive participation to their small group modeling activity, the positive epistemic emotion of joy facilitated her active participation. She constructed frustration in the Lesson 1 because of combined feeling of self-incompetence, thus having the fear of being judged by her groupmates. However, this was changed to anxiety in Lesson 2 because of the teacher's post-lesson individual and group interview as an intervention. During the interview, the teacher reminded the more academically achieving students to give chances for the other group members to share their opinions. Consequently, the other members became more affective. However, Susan still constructed the negative epistemic emotion of anxiety from the second to the third lesson and passively participated in the small-group activities because of her lack of self-confidence to share her scientific knowledge. When the third lesson ended, she was reminded by the teacher to just continue interacting as she had great improvement from the first lesson. Thus, she was able to construct the epistemic emotion of joy from Lesson 5 that extended until Lesson 6. With joy, her cognitive contributions to the group was filled with fun which changed the group atmosphere.