Developing an analysing tool for dynamic mathematics-related student interaction regarding affect, cognition and participation

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In this study, a video excerpt of two boys working on a mathematical open-ended problem is discussed. In the video, affective and social factors overrule development of logical thinking. Analysing such an episode is challenging, as appropriate tools are few. This study elaborates the video excerpt to find out what affective, cognitive and social phenomena exist in the episode, aiming to develop an analysing tool for such purpose. In addition, a framework called Patterns of Participation will be adapted to test its purposefulness to the analysis. As a result, it was found out that most of the essential features of the episode were revealed. However, it is suggested including theories of emotions, student engagement and positioning would make the tool more profound.