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Measuring Collaborative Problem Solving Capability Using Peer Assessment

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Abstract

Collaborative problem solving capability (CPS) has become more important recently. Accurate measurement of CPS is necessary for developing training programs. However, most existing CPS measurement tools have two weaknesses. They do not account for individual contributions to the output. Also, it is hard to utilize new problems. Addressing these weaknesses, we modified the PISA 2015 framework to account for individual contributions to the output and introduced peer-assessment. To test the validity of our proposition, we had fifty participants perform two tasks in different groups, and analyzed the results. We found that the score from PISA 2015 and our modified score showed a high correlation. And, peer-assessed modified scores approximated expert-assessed modified scores. Furthermore, peer-assessed modified scores between the tasks showed a significant correlation, suggesting that it is consistent across different tasks and groups. These results suggest that the modified method and adopting peer-assessment can be used to measure CPS.