A problem shared is a problem halved? Enhancing learning through working in pairs

Anna Dyar

Department of Clinical Sciences, Danderyd Hospital, Karolinska Institutet, Stockholm, Sweden

Correspondence: Anna Dyar, Department of Clinical Sciences, Danderyd Hospital, Karolinska Institutet, 182 88 Stockholm, Sweden.
Email: anna.dyar@ki.se

Health care students’ education is developing as our understanding of learning processes is enlightened by social theories of learning. Increasingly, the social context of learning is being highlighted as a key variable that enhances outcomes ranging from student satisfaction to test scores. We now require concrete examples of techniques that can be used to apply our theory to practice. To that end, in this issue of Medical Education, Rotgans et al explore whether learning is enhanced through dyadic explanations.

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‘Dyadic explanations’ in Rotgans’ study refer to a learning activity where pairs of medical students explain to one another the contents of a preparatory video lecture. The term has two components that are potentially powerful tools for learning: the first, ‘dyadic’, refers to the collaborative component where two students interact with one another, and the second, ‘explanations’, concerns the metacognitive process of recounting the content of the lecture to create constructive learning. Rotgans et al offer insight into the mechanisms of action of dyadic explanations by demonstrating in their controlled experiment that both the interactive and metacognitive components enhance test scores with the combination of the two being most powerful.

Both the interactive and metacognitive components enhance test scores, and the combination of the two outperforms all other control categories.

This study offers valuable insight, and it is worth noting that dyadic explanations are but one of a multitude of collaborative learning practices that have thrived following the development of social cognitive theory and other social theories of learning. Other related practices include team-based learning, cooperative learning and peer learning. These all build on the premises that learning and the environment are interdependent and learning can be both a group process and an individual one. Dyadic explanations fit within the framework of any of these collaborative practices. It would be interesting to investigate, therefore, whether it was the dyadic explanations themselves or other factors in the social interactions between the pair of students that enhanced learning: did the pair’s interaction increase the motivation to learn, for example through promoting an increased accountability to the other student? Was it through increased mutual social engagement? A pivotal question that follows the study’s conclusions is, would pairing up students have the same effect regardless of the nature of the task, the instructions they were given, or the connection felt between students?
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Rotgans et al’s study does partly address these questions by examining the role of the metacognitive processes that lie behind the act of explanation. Even self-explanation without a student partner present was shown to enhance learning, though to a lesser extent. The students’ verbalisation was thought to prompt an integration of new information into existing knowledge. However, talking out loud to oneself while alone is an attempt to recreate an intrinsically social activity, which is may be an effective learning strategy on the whole. Asking questions is a social activity, so it is unsurprising that the study found that students in the dyadic group asked many more questions than students who were alone. Rotgans et al conclude that it is not only the quantitative difference in number of questions but the deep learning that results from clarifying and providing examples that is stimulated by another person, and could account for the superior learning outcomes among students in the dyadic explanations group.

Are the student interactions supervised, and what is the nature of the student-supervisor relationship?

A next step clinical educators will now want to address is how to apply these findings in practice. That is, how can dyadic explanations be used for learning in real world environments? A common misrepresentation of collaborative learning techniques is that peers can be simply put in groups and that some form of learning will happen automatically. In this regard, Rotgans et al ask a key question: ‘To what extent do students spontaneously engage in self-explanation?’ In the present study, the participants were requested by the researchers at certain intervals to explain aloud what they had learnt so far. Outside of a research environment, it is unclear who would make or what could prompt these requests effectively. When implementing dyadic explanations in real-life learning scenarios, should student interactions be supervised? If so, what role does the nature of the student-supervisor relationship play? How is the compliance to these interventions followed up and tested? The way in which peer interactions are supervised is a contentious question in a setting where the underlying objective is an expectation for the students themselves to be independent and take on responsibilities for their own and one another’s learning. However, supervision remains important even when students learn independently, although it requires a change in the nature of the supervisor role. We have recently addressed the question of the role the supervisor plays in peer learning, and our findings suggest that supervising in this context can, in its broadest sense, be seen as contributing to a learning environment that upholds working together and learning from one another as an accepted and automated part of practice.

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Finally, it is noteworthy that Rotgans et al discuss dyadic explanations as self-study preparation for a learning activity. There are potentially wider implications since the results presented show increased knowledge unrelated to any subsequent learning activity. Moreover, dyadic explanations could have further benefits to student learning and well-being that the present study did not investigate, such as promoting professional collaboration and teamwork, practising teaching skills and building self-confidence through being able to answer questions from peers. In other words, dyadic explanations can be seen as a simple technique that has the potential to enhance learning in many different educational settings, with a clear focus for future research being real-life implementation.

O R C I D

Anna Dyar https://orcid.org/0000-0001-8742-8912

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