

On the relationship between students' participation in tutorial groups and study success

Introduction

This study examines students' participation in PBL-tutorial groups in relation to their study success. The aim was to find out how students with higher and lower study success participated in tutorial groups.

Methods

Five PBL-tutorial groups of first-year students were videotaped twice during a Cell Biology and Basic Tissues course. The course includes 8 PBL-cases from which two reporting phase sessions were videotaped. In this study we focused on a group whose students' (n=6) course examination points deviated the most. Students' participation in the latter reporting phase session was analyzed. The method of analyzing students' participation was based on a coding scheme by Visschers-Pleijers et al. (2006). Unit of analysis for students' participation was one utterance. Five participation categories were recognized in these data. Three of the categories were learning oriented: cumulative reasoning, checking understanding and asking questions. The remaining categories were procedural participation and irrelevant/off-task participation.

After the videotaped session students answered a questionnaire containing 5-point Likert scale (1 not true – 5 true) statements pertaining to group functioning, tutor behaviour and student performance. Two statements of the questionnaire were used: 'I had studied thoroughly before the session' and 'I knew the topic well in the reporting session'. Students' answers to the statements and their points in the course exam and participation in the group were compared.

Results

Students with more learning oriented participation got more points in the exam than students with less such participation. This connection, however, is not completely linear nor statistically significant in our small sample ($r=.757$). Students' self-evaluation of how well they had studied before the session and how well they knew the topic correlated significantly with study success ($r=.913^*$, $r=.812^*$) and with the amount of learning oriented participation in the session ($r=.931^{**}$, $r=.971^{**}$).

Categories for students' participation

- Irrelevant/off-task:** utterances that are irrelevant to the topic or student murmuring with a friend.
- Procedural:** utterances related to collaboration process and practical aspects of working on the case.
- Learning oriented:**
 - Asking questions:** questions aiming at eliciting more information about the topic and others' ideas.
 - Checking understanding:** asking for confirmation for own hypotheses or comprehension of the topic.
 - Cumulative reasoning:** providing information, expressing own hypotheses and ideas, continuing from other's ideas.

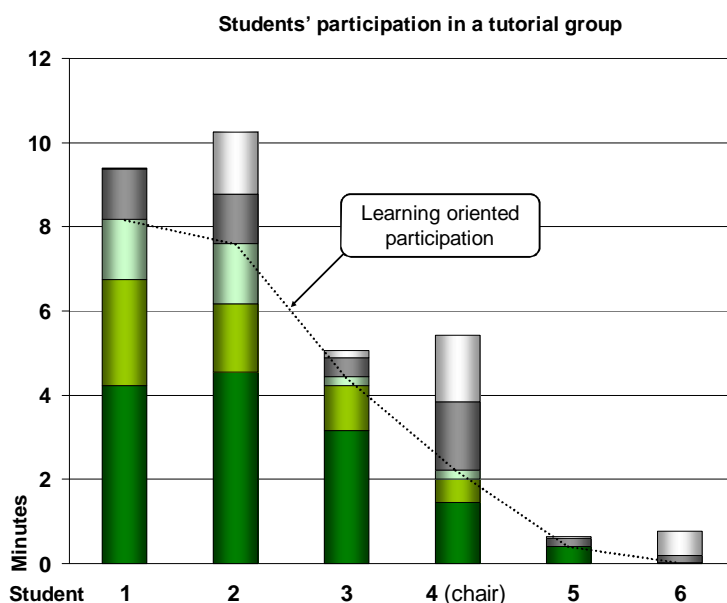


Table 1. Students' self-evaluation after the session (1 not true – 5 true).

"I had studied thoroughly before the session"	5	5	5	2	1	1
"I knew the topic well in the reporting session"	5	5	4	2	2	1
Points in the exam (max 24)	19,5	17	22,5	7	7	10,5

Conclusions

Students who get more points in the exam seem to engage in learning oriented participation more than students with lower study success, at least in a group where study success is unequal. Combining student participation with how well they studied before the session and how well they knew the topic, we can predict individual study success more reliably. Even though there are many other factors such as individual learning strategies, student motivation, group functioning etc. that may also explain study success, the results suggest that students might benefit from tutoring that promotes students' active role at every stage of the learning process. Further conclusions require more detailed analysis of the quality of student participation and further studies with larger samples of students and comparison with groups where study success was more equal. The ways in which group functioning and student interaction can support learning should also be examined.

Reference: VISSCHERS-PLEIJERS, A.J., DOLMANS, D.H., DE LENG, B.A., WOLFHAGEN, I.H. & VAN DER VLEUTEN, C.P. (2006) Analysis of verbal interactions in tutorial groups: a process study. *Medical education*, vol. 40, no. 2, pp. 129-137.

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