DIFFERENT PERCEPTIONS OF PROBLEM BASED LEARNING AMONG POLISH AND SCANDINAVIAN STUDENTS. IS PBL THE SAME FOR EVERYONE? PRELIMINARY STUDY

Agnieszka Skrzypek
Tomasz Cegielny
Marta Szeliga
Konrad Jabłoński
Michał Nowakowski

Department of Medical Education
Jagiellonian University
ul. Św. Lazarza 16
31-530 Krakow, Poland
e-mail: agnieszka.skrzypek@gmail.com

Abstract: Background: Problem based learning (PBL) is often used to teach social competences which are very culture dependent and prior background, ethnicity and other factors may play a role. Data on role of those contributing factors is very limited. Aim of study: Comparison of perceptions of PBL between native Polish students and English language full time Scandinavian students of the same university. Methods: In 2013 a subject fully integrated with Pathology, based on PBL principles was introduced into the curriculum. Two groups of students were evaluated: group A (Polish) and group B (Scandinavian). Both had the same content. After one semester (75 hours) the analysis was performed. Anonymous and voluntary questionnaire evaluating various elements of the course (17 questions) was used. Results: We had sufficient return rate 78.9% (A:71/90) vs. 63.8% (B:46/72) respectively. Almost 62% of Polish and 67.4% of Scandinavians liked the method of teaching. 74.6%(A) vs. 78.3%(B) claimed that course motivated them to learn and explore knowledge in various fields. 71.8% vs. 89% think that time devoted is well spent. 60.6%(A) vs. 91%(B) claimed that the course help them to recall basic science and 39.4% vs. 69.3% students think that it increased their skills in teaching others. Class performance and MCQ test were not significantly different. Polish and foreign students were satisfied with the PBL course. There are significant differences between students from different ethnic groups in their perceptions of PBL. Further assessment of PBL should be continued to better understand how to use it to maximize benefits of different students' populations. The same PBL course may be different for subpopulations of students.

Keywords: Problem Based Learning, culture dependent background, perceptions of PBL among different ethnic groups, cultural diversity among students.

Introduction

The importance of cultural, in particular racial and ethnic diversity in medical educational programs was pointed out in 1999 by Loudon R., Anderson P., Gill P. and Greenfield S. [1]. It was connected then with multiracial, multiethnic and multicultural society in the United Kingdom. The researches focus their attention on whether government health service institutions reflect cultural sensitivity and competence and also whether medical students receive proper guidance in this area [1]. Medical school educators increasingly use problem-based learning strategies, particularly in the pre-clinical years [2, 3, 4]. Students are characterized by more active learning in this type of education. They have higher satisfaction. Problem-based learning is provided in small groups (about 8-10 students in one group). This fact has a huge impact on overcoming cultural barriers and promoting collaborative learning among diverse student groups [2, 5-8]. Problem based learning is often used to teach social competences which are very culture dependent and prior background, ethnicity and other factors may play a role here. Data on role of those contributing factors is very limited. Problem based learning uses peer teaching and in medical education their value increases [9-11]. Student teaching in medical training affords many benefits to students in developing as a teacher and alike faculty being cost-effective [9, 12]. Medical students who teach their colleagues have reported positively on the experience, especially in developing clinical skills and knowledge [13, 14]. This method of learning may result in attainment results...
comparable with those taught by professors and clinical lecturers [15]. Student teaching can be viewed positively or negatively depending on the teaching environment [16] and also cultural and social factors.

**Methods**

This study is aimed to compare perceptions of problem based learning (PBL) between native Polish students and English language full time Scandinavian students of the same university and also establish satisfaction of students teaching. In 2013 a subject fully integrated with Pathology, based on PBL principles, so called Introduction to Clinical Science (ICS) was introduced into the curriculum. The students, who participated in this subject, were third year undergraduates on a six year medical course. The objective of the course was to solve problems on the basis of specially prepared clinical cases (CBL – case based learning), relating to one of the main disease entity, which was discussed parallel to classes of pathology. Students worked in groups of 8-10 people, classes were supervised by 1 tutor during one clinical case, and maximum 2 tutors led classes in one group during the whole ICS course. The students analyzed the available information, lab or imaging tests results and suggested further proceedings, which allow to acquire the skills that lead to self-solve problem. During the course 8 clinical cases were discussed, each of the case was divided into 4 to 6 parts, and students analyzed and solved it for three consecutive meetings (3 meetings, each 2 hours and 15 minutes duration). While working on each new case, students performed brain-storming, discussion and created learning objectives (LO). Each student prepared a short presentation by a group selected topic or LO and presented it to the whole group during the next meeting (lecture or multimedia presentation). We evaluated two groups of students, who returned questionnaire: 71 Polish (group A – Polish-spoken) and 46 Scandinavian students (group B – English-spoken). Both of them had the same content, the same case report was prepared in the Polish and English language. After one semester (75 hours) the analysis was performed. A questionnaire was administered to students after participating in PBL course. Filling in the questionnaire was anonymous and voluntary. We used the questionnaire containing 17 questions: close- and open-ended, evaluating various elements of the course (Table 1.) The answers were coded as follows: 1 – Definitely Yes, 2 – Rather Yes, 3 – Yes / No, 4 – Rather Not, 5 – Definitely Not. For statistical analysis we used the software Statistica 12.0. T-student test and Pearson Chi^2 test were performed.

Ethics approval - consent for study: KBET 122.6120.225.2016. All of the participants received the explanatory statement along with the questionnaire. Therefore, filling in the questionnaire was considered as an informed consent to participate in this study.

Table 1. The questionnaire.

<table>
<thead>
<tr>
<th>Question</th>
<th>Definitely Yes</th>
<th>Rather Yes</th>
<th>Yes / No</th>
<th>Rather Not</th>
<th>Definitely Not</th>
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<tr>
<td>1. Do you think the subject Introduction to Clinical Sciences (ICS) allows you to understand the meaning of learning basic sciences such as anatomy, biochemistry, physiology?</td>
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<td>2. Do you think that ICS integrates knowledge of basic sciences with clinical knowledge?</td>
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<td>3. Did ICS allow you to gain knowledge and learn new topics?</td>
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<td>4. Did the course help you to recall basic science knowledge?</td>
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<td>5. Do you like the way of teaching during ICS course?</td>
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<td>6. Did ICS course help you to get some understanding of your role as a physician?</td>
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<td>7. During the course you were asked to prepare several short presentations to teach your colleagues and share your knowledge. Did that give you satisfaction?</td>
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<td>8. Did ICS course motivate you to learn and explore knowledge in various fields different then your main interest area?</td>
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<td>9. Did ICS help you acquire skills in teaching other students?</td>
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</table>
Summary of results

We obtained a significant percentage of our questionnaire returns: 78.9% (71/90) from group A vs. 63.8% (46/72) from group B respectively. Over 91% Scandinavian students (B) vs. 60.5% Polish-spoken (A) claimed that the course helped them to recall basic science (Q4) while none of the Scandinavians considered that the course did not help them, so think as much as 15.5% of Polish students. The difference between two groups of students was statistically significant, p=0.004 (Fig. 1).

The similar results in both groups were observed analyzing questions Q5 and Q8. 62% of Polish (A) and 67.4% of Scandinavians (B) liked the method of teaching (Q5), and 74.6% (A) vs. 78.3% (B) claimed that course motivated them to learn and explore knowledge in various fields (Q8). There were no statistically significant differences between the nationalities: Q5 and Q8, p=ns, (Fig. 2, 3).

Comparable to Scandinavian most of Polish students feel satisfaction with preparing presentations to teach their colleagues and share their knowledge: on the Q7 the answer “definitely yes” and “rather yes” has been chosen respectively by 55.38% (B) vs. 54.97% (A), p=ns. Statistically significant majority of Scandinavian students 69.3% (B) vs. 39.4% (A) thought that it increased their skills in teaching others (Q9), p=0,013. (Fig. 4).

Over 80% of both groups claimed that this subject is needed in the curriculum of medical studies (Q12), and the results were no significant among, p=ns (Fig. 5). This confirms the fact that the structure of the subject and method of teaching is interesting and absorbing for students and introduces a new quality in their education.
Fig. 2. Q5. Did you like the way of teaching during ICS course?

Fig. 3. Q8. Did ICS course motivate you to learn and explore knowledge in various fields?

Fig. 4. Q9. Did ICS help you acquire skills in teaching other students?
About 72% of Polish and more than 89% of Scandinavian students thought that time devoted on the course was well spent (Q14) but almost 13% of Polish students considered that a waste of time when none of the Scandinavians thought similarly. The difference was statistically significant p=0.027 (Fig. 6).

Responses to the other questions were very similar in both groups, and the differences were not statistically significant. Class performance assessed by the tutors and MCQ test were not significantly different.

**Discussion**

Nowadays there is still limited information available on an increasingly important subject connected with cultural diversity and differences among students in medical education. According to van Wieringen, Kijlstra and Schulpen, in multi-ethnic societies the challenge is to face various aspects of cultural diversity, such as communication barriers and differences in religion, socioeconomic status and ethnic background [17, 18]. It is important that students have different priorities and learning objectives depending on nationality and culture even participating in an identical program at different stages in their education [1, 19]. It was documented by Kaufert et al. in their publication about the impact of sociocultural and political factors in clinical communication by using of “trouble case” examples in teaching [19]. Another significant problem is development of language skills enabling students to acquire sufficient skills to work effectively in English and also in Polish with patients in Polish hospitals [20, 21]. Our study proved that cultural diversity in medical education should be considered in the curriculum. For example, we should give more opportunities to the Polish students to prepare presentations and in this way to teach their colleagues. Dogra et al. and Lu et al. suggested that it could be a challenge to construct a curriculum in ethnically diverse countries [22-25]. Our finding resembles these which described a remarkable absence of clear content and lack of universal standards.
for cultural diversity training [22-25]. An overload curriculum could also be a problem, especially for foreign students [25]. A strategy to incorporate cultural competence into curricula was developed in the USA [26]. Also cultural diversity training for doctors was initiated in the UK [27] and in Canada [28]. Further research that focused on identifying effective components of educational programs on cultural diversity and valid methods of program evaluation and student assessment is needed [1]. We hope that our analysis raises awareness of significance different perceptions of the same subject among students of different nationalities.

Conclusions

Our study proves that the same PBL course may be different for subpopulations of students depending on their national culture. Polish and Scandinavian students were satisfied with the PBL course. There are significant differences between students from different ethnic groups in their perceptions of PBL. Our study suggests that medical students need to increase their skills in teaching others. Competences in teaching are needed by them because they should professionally teach their patients (of different nationality) and some of the students (of diverse culture) in the future. Further assessment of PBL should be continued to better understand how to use it to maximize benefits of different students’ populations. In the near future we will also explore perceptions of Problem Based Learning among Polish, Scandinavian and American students.

References

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