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TUTORSHIP AND STUDENT AUTONOMY IN TEAMWORK AND PROBLEM-SOLVING IN LSP TEACHING

Abstract

One aim of using a problem-based approach to teaching Languages for Specific Purposes/English for Specific Purposes (LSP/ESP) is to develop students' autonomous learning while solving professionally relevant problems in teams. With this in mind, this qualitative study investigated the influence of two kinds of tutor guidance – constant tutor guidance and tutor guidance upon request – on students' autonomous learning and self-guidance. Our sample included two sets or groups of students, divided into smaller teams, in a higher education institution in Slovenia. Teams in Group A (tutor-guided teams) received tutor assistance during the whole learning process and one year earlier had also acquired theoretical knowledge concerning teamwork in the ESP (Business English) course. Teams in Group B were in contrast self-guided, receiving tutor assistance only upon request, and received no theoretical knowledge concerning teamwork in the ESP course. Basic information concerning the PBL (Problem-Based Learning) method was given to teams in both groups. The data were collected by means of questionnaires and interviews. The results show that opportunities for creative teamwork and quality (almost autonomous) problem-solving emerged in certain teams in each group. However, continuous tutor observation and support contributed to a better result. It was also established that the success or appropriateness of a self-guided process depended on factors like the quality of teamwork and problem-solving, leadership within the teams, students' competences, shared values and goals, and the team members' enthusiasm and commitment.

Keywords: problem-based learning, teamwork, problem-solving, tutor guidance, within-team leadership (leadership within the team)

1 Introduction

Graduates are increasingly expected to learn autonomously, possess good problem-solving skills, and be able to work in teams. Teachers accordingly strive to use innovative teaching and learning methods (e.g. problem-based learning or PBL, design thinking etc.) that encourage students to become autonomous and develop high-level competencies. These learning objectives require teachers to adopt new, less traditional roles, like the role of tutor. Among others, tutoring involves acting as a facilitator or supporter of the learning process, using scaffolding to support problem-solving and assisting both teamwork and collaborative learning.

In PBL, the appropriate level of tutoring and appropriate tutor behaviour are both vital. We define the tutor as a person (teacher) who scaffolds, observes, supports and facilitates the processes of learning and problem-solving in teams. "The tutor acts as a facilitator by applying learner-oriented interventions to monitor students' self-directed and collaborative learning process and to activate knowledge construction" (Assen et al., 2018, p. 132). Some students require a tutor's carefully planned, albeit scaffolded guidance, some require or prefer full autonomy in their learning, while others lie somewhere in the middle of the continuum between strong guidance and total autonomy. Tutoring may thus be regarded as a type of leadership that ranges between two extremes: from controlling or directive to non-directive/laisser-faire. Opportunities for largely independent or 'tutor-less' problem-solving and creative work may be enhanced when students work in teams because team members can replace some of the tutor's roles. Yet, when encouraging autonomous student learning and the best outcome for the student, tutors always face the dilemma: what is the appropriate extent of tutor involvement/guidance in a particular group? In other words, what is the appropriate extent of student autonomy?

This paper is focused on PBL in the context of English for Specific Purposes (ESP), namely Business English. The research gap we aim to bridge concerns whether the level of tutor involvement[1] influences students' problem-solving skills, their teamwork, final achievements, and level of autonomy. In this context, we also seek to identify factors with an influence on the students' performance in each group, i.e. those factors we could not control.

2 Theoretical framework

PBL is one of many innovative teaching and learning methods (Taneja et al., 2018), yet is less frequently applied in LSP courses. Therefore, the rationale for using PBL in LSP courses is first provided. Next, students' and teachers' roles specific to PBL are presented in detail since collaborative methods require less traditional roles from each of them. Further on, we focus on teamwork, within-team leadership (leadership within the team) and tutoring, and problem-solving.

2.1 PBL in LSP

PBL is based on contemporary views on learning, i.e. team learning and the constructivist concept of learning. It entails a collaborative teaching and learning method (Rodríguez et al.,

1 In LSP, language teachers, i.e. PBL tutors, represent non-content experts.

2017), meaning that groups of students work together to solve a problem, complete a task, or create a product. Murray and Savin-Baden (2000) add that PBL provides opportunities for developing high-level skills like problem-solving, and skills that promote autonomous learning. Skills such as teamwork, critical thinking, problem-solving, creativity and ability to take risks tend to be among the top job requirements for graduates in many disciplines (Gonçalves Fernandes, 2014). This makes the use of PBL seem suitable as a teaching and learning method to help students prepare for the challenges ahead of them. According to Nadeak and Naibaho (2020, p. 1), "PBL improves the students' critical thinking". Moreover, "PBL forms a teaching method that encourages the students to identify problems, explore interpretation, determine alternatives as solutions, communicate conclusions and integrate, monitor, as well as refine strategies to remedy the problems" (ibid.).

Thomassen and Stentoft (2020, p. 1) state that in PBL it is essential to focus on "authenticity, exemplarity, and interdisciplinarity as key educational concepts when developing competencies to analyze complex problems". The authors thus touched upon "the didactical implications of problem analysis as the most important competency to achieve during higher education and as essential when moving beyond education and into a complex world where problems are always interrelated, as reflected in the UN's Sustainable Development Goals" (ibid.). Problem analysis in PBL is generally performed using various methods and/or research cycles, e.g. the Jamie McKenzie Research Cycle (2000), which can help develop students' competency in problem analysis.

In any collaborative teaching and learning method, good communication between the tutor and the students as well as among the students is very important. The teaching and learning of LSP aim to develop the communication skills in a foreign language needed for success in job- or work-related contexts. Using the PBL approach in LSP thus provides LSP courses an opportunity to serve as a 'meeting point' between studying the profession and studying the (foreign) language. While solving problems related to their future jobs, students are actually improving their communication skills as well. Still, implementing PBL in teaching requires the teacher to take on a new role, which is the topic of the section below.

2.2 Students and teachers in PBL

A PBL approach to teaching and learning requires changes in the roles played by the teacher and the students. Argyris and Schön (as cited in Day, 1999) state there are two models of teacher behaviour:

- designing the teaching environment and controlling it, or
- designing situations (environments) where participants can be originators and can experience high personal causation, and where tasks are jointly controlled by the teacher and the students.

Teachers in PBL act as tutors striving towards the second model of teacher behaviour mentioned above. Since PBL is one of the approaches to teaching and learning that promotes autonomous learning, the tutor and the student work towards reaching the ideal relationship where both are equal and autonomous partners in the learning process in teams. Although the role of the tutor cannot be central in this process, it is very important. The tutor

acts to facilitate the learning process, assisting the students' teamwork and problem-solving. The tutoring process should therefore focus on stimulating the constructive, self-directed, situated and collaborative learning of students in teams (Dolmans et al., 2009). Tutors are hence expected to support the development of students' reasoning skills that promote problem-solving, metacognition, and critical thinking, and help them become independent and self-directed learners (Barrows, 1986).

In PBL, students thus find themselves with a more active role and greater responsibility than in a traditional classroom. However, this proactiveness in own learning processes can range from being entirely dependent on the tutor to fully independent. Self-directed or self-guided learning[2] in PBL does not reduce the roles and responsibilities of tutors in the learning process (Hung, 2011). If they fail to provide modelling and guidance for problem-solving reasoning in PBL, students may continue to use intuitive reasoning or deviate from covering the intended domain knowledge (Perkins & Grosser, as cited in Hung, 2011). Besides insufficient guidance, excessive guidance poses a threat to students' learning outcomes. It can undermine students' development of self-directed learning skills and their establishment of such a mindset (ibid.). Still, Kirschner et al. (2006) found evidence in support of the superiority of guided instruction in the contexts of constructivist, discovery, problem-based, experiential, and enquiry-based teaching. They claim the advantage of guidance begins to decrease only when learners have sufficient prior knowledge to provide internal guidance.

In their research, Mayo et al. (1993) revealed four essential tutor facilitation skills: helping the group be aware of how group processing works; encouraging feedback within the group; guiding the group to set appropriate learning issues; and assisting the group to integrate learning issues. A tutor's performance is not a stable characteristic, but is partly situation-specific (Dolmans et al., 2009). This might also be true when deciding on the level of tutor involvement, i.e. deciding between minimalist/nondirective and directive tutoring. With minimalist tutoring, the line between leading and following is blurred. Yet, the discussion on what tutors perceive to be minimalist – letting the student do all the work – and directive – letting the tutor do all the work – is quite complex (Nguyen, 2015). Nondirective or 'support on request' tutoring can be also labelled 'laissez-fare' tutoring, which means giving guidance and taking responsibility where needed (see Section 2.4).

2.3 Teamwork

Collaboration in teams may be difficult if the conditions do not permit it (Hackman, as cited in Haas & Mortensen, 2016). For successful teamwork, every team needs challenging yet manageable and explicit goals, which they need to understand in the same way and agree on. A strong team structure is also important: diverse knowledge, skills, views and perspectives among team members can spur creativity. A supportive context for teamwork enables team effectiveness and good performance, while establishing clear rules can make team disfunction less likely. Finally, a shared identity and shared understanding in

2 We used the expression self-guided in the following word partnerships: self-guided teams, self-guided approach. With learning, we used both self-directed and self-guided learning, which is a less common collocation (with no difference in meaning).

teams can be considerably enhanced by good leadership (Haas & Mortensen, 2016). While designing PBL in LSP courses, tutors must therefore help create the conditions that enable teamwork.

For successful teamwork, students (and tutors) also need to be aware of the common responsibility for and common ownership of teamwork output. Accordingly, they must understand that performance in teams is collective (it is not just sharing information like in group work), accountability is individual and mutual (it is only individual in group work), and the skills required are to be complementary (they are random and varied in group work) (Robbins & Judge, 2013).

Gonçalves Fernandes (2014) shows that teamwork and collaborative learning boost various skills of students that they need in their future careers. In a higher education context, teamwork gives the opportunity for students to develop several transversal skills that range from problem-solving and time management to oral and written communication skills. Working in teams of students holding different skills, ideas and perspectives was also identified as beneficial (ibid.). Team members can thereby take on various roles ranging from innovator, investigator and chairperson to shaper, team worker, organiser or finisher (adapted from Gibbs, 1981). Alternatively, team members can serve as chairperson, secretary, time-keeper/progress-chaser, reporter, designer/investigator or editor/evaluator (Djurić, as cited in Kosel & Vukadinović, 2005) or, in smaller teams: leader, secretary, reporter/progress chaser, and/or time keeper. The allocation of roles and the decision on appropriate leadership ensure more successful organisation of teamwork and efficient communication. The latter is vital since team members need to agree on team rules/norms, common goals and values important for the success of the project. They also need to agree on the way of organising the teamwork and the type of leadership within the team.

2.4 Leadership and tutoring

The concept of leadership permeates and structures the theory and practice of organisations and hence the way we shape and understand the nature of organised action, and its possibilities. In fact, the concept and practice of leadership, and the variant forms of directions and control are so powerfully ingrained in popular thought that the absence of leadership is often seen as the absence of organisation. Many organisations are paralysed by situations in which people appeal for direction, feel immobilised and disorganised by the sense that they are not being led. Yet, other organisations are plagued by the opposite situation, characterised in organisational vernacular as one of 'all chiefs, no Indians' – the situation where the majority aspire to lead and few are willing to follow. Thus, successful acts of an organisation are often seen to depend on synchrony between initiation of the action and the appeal for direction; between the actions of the leaders and the receptivity and responsiveness of the followers (Smircich & Morgan, 1982).

Leadership is an important element of the directing function of management, which according to Stoner and Freeman (1992) is the processes of planning, organising, leading, and controlling the work or the effort of the organisation's members to achieve the organisation's goals, where such leading is considered to be the "locomotive" (Stoner & Freeman, 1992).

The leadership function thus involves setting goals, organising, initiating action, coordinating, directing and motivating.

Leadership is namely one of the most important functions in managing a certain process. Still, different situations may require different types of leadership. Drucker (2011) states the work of a manager includes five basic operations: setting goals, organising, motivating and communicating, measuring, and developing people.

There are many theories and typologies concerning leadership and leadership styles. Goleman (as cited in Drzewiecka & Roczniewska, 2018), for example, based his typology of leadership styles on the concept of emotional intelligence. He proposed six styles of leadership: coercive (later termed commanding), authoritative (later termed visionary), affiliative, democratic, pacesetting, and coaching. Coercive and pacesetting leaders are prepared to act and take the initiative, they are driven to improve performance to meet high standards, and keep their emotions under control. However, pacesetting leaders display high levels of conscientiousness. These two types of leaders know how to manage themselves but lack in social competencies, which are found in four other styles.

According to the situational leadership theory developed by Hersey and Blanchard in 1969 (Sethuraman & Suresh, 2014), effective leadership depends on leaders' ability to change their behaviour to suit the situation. In 1977, Hersey and Blanchard (ibid.) highlighted four different types of leadership behaviour: telling (high directive, low supportive), selling (high directive, high supportive), participating (low directive, high supportive), and delegating (low directive, low supportive). Still, the Full Range Leadership (FRL) model proposes three different leadership styles: passive/avoidant (including laissez-faire), transactional, and transformational (Kindarto et al., 2020). We may conclude that leadership styles vary and range on a continuum from autocratic (commanding/telling) to laissez-faire. The latter can be compared to "support upon request" tutorship – giving guidance and assume responsibility where needed. Laissez-faire leadership is the opposite of autocratic leadership. It is also called delegative leadership. According to Eagly et al. (2003, p. 571), it exhibits "frequent absence and lack of involvement during critical junctures" and is "marked by a general failure to take responsibility for managing", although these leaders have an attitude of trust and reliance on their subordinates. Martinuzzi (2021) states that they do not micromanage or become too involved and do not give too much instruction or guidance. It is subordinates and team members who take the lead.

Nevertheless, to pursue the primary purposes of PBL it is appropriate to strive towards democratic (or participative leadership or shared leadership) – characterised by group members taking a more participatory role in decision-making; not only the leaders but also other members are involved – or towards constructivist leadership styles, characterised by a less hierarchical and more cooperative approach to managing affairs, leadership that blurs the line between leading and following (Northfield, as cited in Duignan & Macpherson, 1992).

The chair in the team may perform all of the "management/leadership" functions (e.g. planning and goal-setting, organising, leading and controlling plus motivating, communicating, integrating) or share them with other team members. The decision depends on the type of leadership and on the organisation of/agreement on functions or roles in the team, e.g. chair, planner, innovator, time-keeper, team worker, evaluator (see Section 2.3).

In this paper, we discuss leadership by referring to leadership by the chair or team members within a team, and refer to tutorship as the activity engaged in by the teacher/tutor. In his book Minimalist Tutoring, Brooks (1991) paraphrases this style as: making the student do all the work. Price (2019, p. 16) discusses the balance beam between directive and nondirective tutoring approaches: "A directive tutoring approach involves calling attention to a student's errors and giving him advice. Nondirective tutoring approaches involve leading students to discern their errors by themselves. Both methods face scrutiny: some say directive methods discourage tutees, ultimately disempowering them as writers by usurping their control. Others claim that nondirective methods leave tutees confused and frustrated".

The directive tutoring style is denoted by the tutor giving explanations, answers and examples and also by posing leading questions. In contrast, the nondirective tutoring style is characterised by the tutor demonstrating or modelling a strategy, giving part of an answer, asking open-ended questions, using humour, providing positive or negative feedback, and evincing sympathy and empathy (Corbett, 2020).

Nonetheless, with PBL in an LSP course leadership within the team is not the only guidance a team obtains: the team is supported by 'leadership from the outside of a team', i.e. by tutorship. The relationship between the two leaderships should (ideally) be reciprocal and complementary. The tutor's relationship with the team and its chair, as well as the type of tutoring, either directive or minimalist, should be in line with the within-team leadership. In terms of the roles of students/team members in minimalist tutoring, the students can assume some or most roles of the teacher/tutor. Regarding directive tutoring, some tutor roles may be assumed by the team chair, who can also delegate the roles to other team members.

2.5 Problem-solving

The teams' problem-solving efforts were strongly related to the way they had organised the teamwork[3] and to the quality of leadership within the teams, i.e. the chairs' competencies and responsibilities. Good communication, shared goals and responsibilities with a high level of motivation and commitment are indispensable for solving problems in teams. Kim and Grunig (2011) found that one's commitment to solving a problem enhances the search for information, its selection and sharing it with others. Yet, while students apply the theoretical concepts they have learned in real-life situations to solve a problem and thus relate theory to practice within an interdisciplinary context, their communication is more complex as team members need to confront each other's knowledge, beliefs, decision-making mechanisms, arguments, and must find common ground. To support them in the problem-based learning process, a suitable model of instructional design is needed (Hung, 2011). While learning in teams and solving problems in PBL, students generally follow a research model.

The instructional model used in our case is based on McKenzie's Research Cycle (2000) and has been used in higher education LSP courses in Slovenia for over 20 years. It comprises seven steps:

3 With the term organisation (and to organise), we refer to allocating tasks, deciding on the roles and responsibilities in the team, and finally structuring the problem-solving process and its recording (presenting the process and its results).

- identifying the problem and appointing roles to team members;
- brainstorming, defining the problem in detail and formulating questions;
- identifying current knowledge and learning needs;
- structuring ideas;
- formulating learning aims/goals, and distributing assignments;
- out-of-class research: individual research using valuable sources of information by means of information search strategies as well as contacting subject teachers or/and tutors; and
- discussing and evaluating new information.

This model was further developed or adjusted to meet the needs of the students and their institution, and is presented in the next section.

3 Methodology

The purpose of this qualitative study is to establish how/whether the extent of tutor's involvement influenced the students' success with teamwork, their problem-solving, and the final results of student learning in a Business English course for future managers. Namely, the purpose is to establish differences in the performance of tutor-guided (in Group A) and self-guided teams receiving tutor support only upon request (in Group B), and to identify some influential factors.

We decided to use two different approaches given that our hypothesis/assumption was:

> We can achieve better results by using the nondirective approach with more autonomous, self-initiative, cooperative, committed and enthusiastic students, and in turn we can achieve better results by using the directive approach with less autonomous, self-initiative, cooperative, committed and enthusiastic students.

We expected that by the end of the process the tutor-guided teams might have more chances 'of moving along the continuum' towards self-guided learning as the tutor was a kind of 'role model' with her guidance, and the self-guided teams might become 'even' more self-guided or autonomous.

The criteria for deciding which type of guidance to be used by the tutor in the two different groups were the students' level of:

- enthusiasm and their committed (hard) work during the previous academic year; and
- autonomy, self-initiative and cooperation (success in a pair/group).

The above mentioned – enthusiasm, commitment, autonomy, cooperation – was reflected in the students' final grades for the previous academic year, which form another criterion/measure for deciding which type of guidance was to be used (combined with the teacher's/tutor's observations of the students' work).

3.1 Research questions

The research questions are thus the following:

1. Is teamwork in a PBL setting more effective in teams with a tutor-guided approach or in teams with a self-guided approach?
2. Is problem-solving more effective in teams with a tutor-guided approach or in teams with a self-guided approach?
3. Which types of leadership are applied (internally) by team members and what is the level of tutor involvement (external guidance) in the teams in each group?
4. Is there a significant difference in the performances, i.e. the final results, of the teams with a tutor-guided approach or the teams with a self-guided approach, and which factors are influential?

3.2 Research design

Our study was conducted at the Faculty of Management of the University of Primorska in Slovenia during the Business English course. The same tutor (language teacher) and the Student's Guide to Problem-based Learning (Celinšek, 2004) were available to all students. As the problems discussed in the PBL project were interdisciplinary in nature, the students were encouraged to cooperate with subject specialists.

Two different models of tutor behaviour were implemented with two different groups (classes):

- the tutor-guided approach with the set of students generally perceived to be less autonomous, having less self-initiative and/or being less cooperative and/or less enthusiastic about their studies (Group A); and
- the self-guided approach with the set of students generally perceived to be more autonomous, having more self-initiative and/or being more cooperative and/or more enthusiastic about their studies (Group B).

The sample included 33 first-cycle degree students with the same level of proficiency in English i.e., B2 at the start of the project. All students had passed the exam in Business English in the previous year. They were attending the Business English Course at the same faculty, but at two different locations (campuses): Group A was located at the main premises and Group B at branch premises.

Initially, each team was supposed to consist of four members, but drop-outs meant the number was changed and three teams ended up with only two students. Since in some teams the members simply disappeared mid process, it would have been very difficult to enlarge the team size during the PBL process. The team sizes thus varied between a minimum of two and maximum of five members.

Initially, there were 20 members in Group A and 16 members in Group B. The size of a group was not an issue the tutor could influence. However, the number changed due to the

mentioned drop-outs. Hence, in the end there were six teams in Group A (A1–A6) and four teams in Group B (B1–B4):

- A1 and A3 had three members each (6 students in total):
- A2, A4 and A5 had two members each (6 students in total);
- A6 had five members (5 students in total); and
- B1, B2, B3, B4 had four members each (16 students in total).

In both groups, the students worked in teams and in each team they decided on their own with whom they wanted to work. Each group had experienced teamwork in other courses and was used to working in a team. The teams in Group A were tutor-guided but had also previously been provided with the theoretical knowledge of teamwork in PBL (roles in a team, organisation of work, leadership in a team, shared responsibilities of team members, cooperative learning). The teams in Group B had not been supplied with this kind of knowledge in such depth, although the basic principles of teamwork and problem-solving were explained to them by the tutor. Moreover, the students in Group B were very cooperative and had already worked successfully in pairs and groups in the previous year.

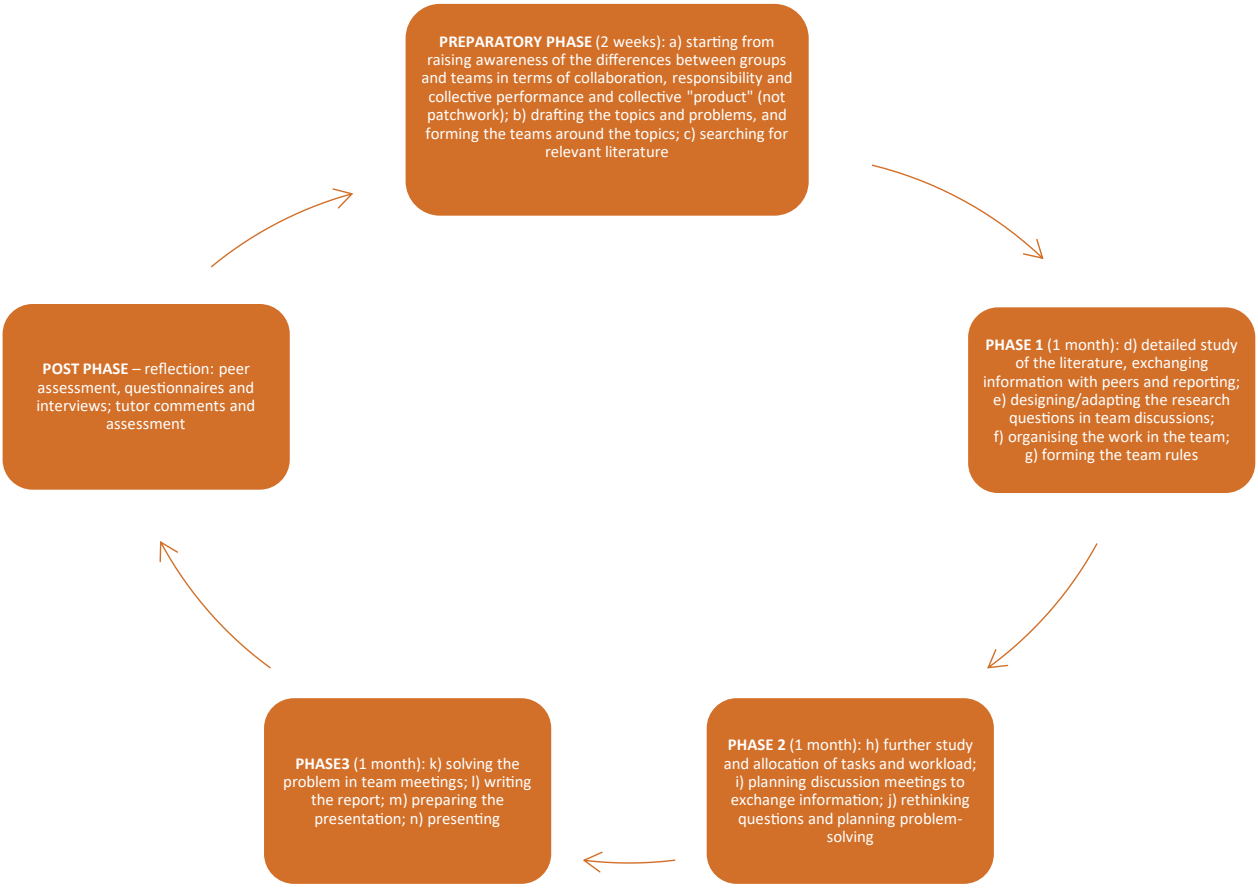
In terms of methodology, we included independent, dependent and controlled variables in our research. Our independent variables were: tutor-support (in Group A) and tutor support only upon request (in Group B). Still, the tutor had to adjust her support or guidance in some teams in Group B, and to move from support only upon request to arbitrary or self-initiative support due to the lack of student commitment and ability to function autonomously. Our dependent variables were: team members' organisation of teamwork, approach to problem-solving, types of leadership within the team, and quality of the final product. Our controlled variables were: time allocated to the project, and instructions given by the tutor in terms of the work method and final products (report and presentation). What we could not fully control was attendance and participation.

The PBL instructional model used in this study was presented to all students. The five steps or phases of the PBL process – which could be repeated to improve the process – were suggested to the students, and are presented in Picture 1 below.

For each phase, team members planned a certain number of meetings or other types of communication, which could take place face-to-face, in the e-classroom or outside, and/or online. It was also possible to return to a previous phase (or even start the whole process again) and change or amend what had already been completed.[4] The final products of this PBL project were the team report and presentation.

4 In the phases presented, we focused on the process and not on the organisation of meetings, which was the responsibility of each team.

Picture 1
Five-step PBL Instructional Model



3.3 Data collection

The data collected for the analysis are qualitative data that were obtained through:

a) questionnaires administered to the team members (intermediary short questionnaire/ report and final questionnaire);

b) interviews with the team members; and

c) the tutor's comments and assessment.

The intermediary questionnaire was short and obligatory for students in Group A after Phase 1. On the other hand, in Group B the teams' intermediate short reports served as reflection and feedback on what had to be improved in the learning process and in the teamwork, and were used as data for the analysis. The intermediate short questionnaire in Group A was implemented orally in each team as a discussion (team members took notes), with the tutor present. It consisted of questions on teamwork, students' roles in the team, team rules at that stage of the process, leadership, team functioning in general, values, knowledge, skills, goals, literature/content issues, and research questions. The intermediate short written report on teamwork and preparation for problem-solving in Group B was strongly recommended but not obligatory (two out of four teams handed in their reports) as the tutor wanted to let the

students be self-guided during the whole process. However, the tutor talked to the teams in Group B that did not hand in their written report. Nevertheless, due to their frequent absences it was impossible to talk to the whole team at one time.

The final questionnaire was administered to all students in both groups. The questions were organised in the following sections:

- communication and collaboration in teamwork;
- team's approach to problem-solving; and
- tutor support/guidance and leadership within the teams.

The interviews with team members were semi-structured and conducted with two representatives of each team. The interviewees answered the following topics:

- organisation of teamwork, advantages/disadvantages of teamwork, and type of leadership within the team;
- problem-solving and use of the Student's Guide to PBL (Celinšek, 2014); and
- tutor's and subject specialist's (if applicable) support or guidance and the resources used.

The tutor kept records of observations on the work of the teams, their achievements and problems, and provided the final grade for each team. The final grade included the grading of the report (in terms of content, discourse and lexico-grammatical strand, and terminology) and presentation (relevance of the topic, structure, delivery, language). Each team member was in charge of the whole report and also of a designated part of the report. The tutor also looked into the self-assessment and the peer-assessment feedback of the students or team members, respectively. The assessment criteria were adopted from the PBL Assessment Form (Kosel & Vukadinović, 2005).

4 Results

In this section, we present results of the analysis of the questionnaires, interviews and tutor's observations. We did not include intermediary questionnaires and reports as they are not relevant to our research questions. The results will be summarised with regard to the four research questions.

4.1 Is teamwork in a PBL setting more effective in teams with a tutor-guided approach or in teams with a self-guided approach?

The results revealed that only half of the tutor-guided teams (3) in Group A worked successfully as a team. The three successful teams performed well in terms of communication, cooperation, organisation, appropriate task allocation, and successful leadership, agreeing on common objectives, team rules, and values. On the other hand, the other three teams did very poorly in terms of communication, cooperation, and organisation. Not everybody was equally involved in the teamwork and some students worked on the same tasks. There was no leadership or the leadership was confused, the students showed a lack of interest and ran

out of time, they did not share common goals or they were inappropriate, and their understanding of teamwork was inadequate (despite the tutor's initial support and availability during the process). A high level of tutor support was needed in these teams, yet the guidance was not fully followed nor taken advantage of.

Likewise, only half the self-guided teams in Group B worked successfully as a team: they took decisions together and successfully handled disagreements, and strived to contribute equally. One team benefited from the teamwork experience in another course. On the other hand, members of less successful teams experienced difficulties in organising their work and completing their tasks on time and did not share a clear focus or common goal. Moreover, there was very little face-to-face communication: they communicated mainly via e-mail, social networks, and telephone. Tutor support was needed, although it was very difficult to provide it as students were often absent and their contact with the rest of the team and the tutor was irregular. The team members did not strive to work together, on the contrary, they worked either individually or in smaller teams within the same team, which did not lead them to successful results. Some members of these unsuccessful teams were balancing a job while studying and others were actively engaged in professional sports.

4.2 Is problem-solving more effective in teams with a tutor-guided approach or in teams with a self-guided approach?

The teams' problem-solving efforts were strongly related to the way they organised the teamwork and to the quality of the leadership in all teams in Groups A and B. In the tutor-guided teams of Group A, two of the three successful teams were engaged in solving the problem under 'stronger' internal leadership. Their problem-solving process was organised by the chair and with little or some tutor support. On the other hand, the third most successful team had more democratic leadership: the students cooperated as equals and made use of the constant tutor support. The less successful tutor-guided teams had no appointed chairs nor proper leadership, or did not share a common understanding of leadership. They often (more than expected) needed tutor support. In these teams, some team members were frequently absent and some teams insisted on decisions that did not lead to a satisfactory result and successful problem-solving. The less successful teams also kept changing their research questions and struggled to find a solution to the problem they were attempting to solve. There was also some 'spontaneous' problem-solving that did not follow the suggested problem-solving phases in all teams. However, members of the tutor-guided teams were generally more willing to follow the research phases presented by the tutor.

In the more successful self-guided teams of Group B (two teams out of four), the chairs or two members were more involved in problem-solving as they were more creative or had more ideas. The teams' work was characterised by great chemistry and good cooperation. In comparison, in the less successful self-guided teams either only half the team was involved in problem-solving or all the problem-solving was done only by a single member student (the other members simply followed). The less successful teams lacked organisation and had a different perception of chairmanship/leadership. They required tutor support in problem-solving and organising their work. Yet, only one team – the team that also cooperated with a subject specialist outside the university – asked for some tutor support with problem-solving

at the beginning. The other team chose the tasks independently according to their wishes and neither asked for the tutor's support nor for the subject specialist's (external expert) support. There was just one member 'controlling' all of the work, starting the problem-solving process and trying to finish it. The team tried to solve the problem individually first, then in two subteams and finally followed one of the team members. Although the tutor intervened on her initiative (but making contact was almost impossible and it was only with one member – written and oral), the team failed to complete the problem-solving process. The most serious problem in that team was absenteeism and the very poor response to the tutor's call for action.

4.3 Which types of leadership are applied (internally) by team members and what is the tutor's involvement (external guidance) in each group?

To pursue the primary purposes of PBL, it is appropriate to strive towards democratic or towards constructivist leadership within the team, i.e. internal leadership. The same applies to tutorship, which can also be called external leadership as such tutorship should change the status of the students for the better. For the purpose of describing the leadership within the teams in this research, we chose to use three types: strong (autocratic, authoritative), democratic (shared, close to constructivist), and weak (mainly poor, laissez-faire) leadership.

As for tutorship – the tutor's mode of guidance, we chose to use directive (strong and less strong) tutorship with Group A and non-directive (support upon request) with Group B. Where possible, the tutor followed the principles of constructivist leadership/tutorship. In terms of the laissez-faire principle, it did not prove a successful type of leadership within the teams.

In the tutor-guided teams in Group A, two of the three successful teams engaged in problem-solving under strong (authoritative) internal leadership. Their problem-solving process was organised by the chair and with little or some tutor support. The team members followed the chair gladly. They all agreed that such leadership was good. One of these successful tutor-guided teams (of three members) required constant tutor support (strong directive tutorship) while the other received only little tutor support. The third most successful team had more democratic leadership: the members cooperated as equals but took advantage of the constant tutor support. There was no appointed leader and the two members who constituted the team jointly managed their work and were almost self-guided most of the time (very close to constructivist leadership).

The less successful tutor-guided teams had no appointed chairs nor proper leadership – there was very weak or no leadership at all, while some team members did not share a common understanding of leadership. They often, more than expected, needed tutor support, namely strong directive tutorship, as their chairs and team members were unable to handle the problems. In these teams, some team members were frequently absent and some teams insisted on decisions which did not lead to an appropriate result and successful problem-solving. The less successful teams also kept changing their research questions and struggled to find a solution to the problem they were attempting to solve, which was the result of poor organisation and leadership. While a lot of tutor support was offered to the less successful teams, the results were poor, probably due to the team members' absenteeism or lack of commitment and contact among the team members.

In the more successful self-guided teams in Group B (two teams out of four), the chairs were more involved in problem-solving as they were more creative or had more ideas. The teams' work was characterised by a good atmosphere and good cooperation ('good chemistry') influenced by the chair. We can label the chairs' leadership in one team as strong – authoritative: the members trusted the leader who contributed the biggest share to the problem-solving process. We can also label it as 'selling' leadership – high directive, high supportive (Hersey & Blanchard, 1977). The leadership in the other team was perceived as democratic by the members – no leader was formally assigned but two team members held more important roles than others. There was some tutor support (constructivist tutorship) upon request in both teams.

In the less successful self-guided teams, on the other hand, 'poor' or no leadership was seen. It seemed to be laissez-faire leadership at first glance, yet with laissez-faire leaders have an attitude of trust and reliance towards other members, which was not the case here. There was also poorly organised work in these teams. Either only half the team was involved in problem-solving or all the problem-solving was done by a single team member. The less successful teams were thus not well organised (in terms of tasks and roles) – which among others is the chair's responsibility – but there was no proper chair. Moreover, the members' understanding of leadership was not shared within the team. These teams needed tutor support in problem-solving and organising their work, which was mainly due to their poor time management, a lack of focus and commitment. However, only one of the two less successful teams had asked for tutor support in terms of guidance with problem-solving and teamwork at the beginning of the process, and thus a kind of directive tutoring was applied when possible. The same team also cooperated with a subject specialist who provided some guidance in terms of information search. The internal leadership in this team was perceived differently by the members, who worked in two sub-teams. The other team chose the tasks independently and did not ask for either the tutor's or subject specialist's support. There was no proper leadership, just one member 'controlling' all of the work but who did not hold the status of leader. He wanted to organise the work and complete the task – starting the problem-solving process and trying to finish it. The team tried to solve the problem separately at first, then in two sub-teams, and finally followed one of the team members. There was no tutor support upon request and, even though the tutor intervened on her own initiative, the team failed to complete the problem-solving process. We could label this kind of tutorship as 'enforced' tutorship. The members here too worked in two sub-teams, yet there was lack of cooperation between them and they lacked a clear focus. The most serious problem in this team was absenteeism and the very poor cooperation and responsiveness.

4.4 Is there a significant difference in the performances, i.e. the final results, of the teams with a tutor-guided approach or the teams with a self-guided approach, and which factors are influential?

In terms of performance as shown in the assessment of the team reports and presentations, half the tutor-guided teams performed very well while half achieved modest final results. In the self-guided teams, half the teams performed very well or achieved an excellent result, whereas half performed poorly or unsuccessfully. We may therefore conclude that

there were well-performing as well as poorly-performing teams in both the tutor-guided and self-guided teams.

Even though we had expected more successful teamwork and problem-solving and therefore a better final performance in Group B, the shares of very successful and less successful teams were the same. Moreover, one team in Group B even failed to conclude the process, i.e. to meet the final objective. Despite the same level of foreign language proficiency, the success of the teams varied within both the tutor-guided and self-guided teams.

We also compared the groups' achievements in terms of the grades the teams in each group were awarded. The final grades in Group A were: 9, 9, 8, 6, 6, 6, and in Group B: 10, 9, 6, fail[5]. The tutor's comments identify some influential factors in both groups.

Influential factors observed by the tutor in successful teams in Group A were the following: the chair's role similar to the tutor's role; very little tutor support; a relatively self-guided team; tutor support during the whole project; relatively autocratic chair; student work was not a negative influential factor in one of these teams (everybody worked but was well-organised and led). Influential factors observed by the tutor in the less successful teams in Group A were as follows: a lot of tutor support during the whole process; doing everything together (not effective); (a lot of or quite some) tutor support for the teamwork and problem-solving; frequent absences, resulting in delayed task completion; not willing or being able to follow the tutor's advice about time management, poor organisation and logical sequencing; constant tutor support; tutor contact mainly with one member; it was almost all just the chair's or a single member's work, therefore unequal contribution of the members (lack of effort and willingness/enthusiasm).

Influential factors observed by the tutor in the successful teams in Group B were: two members (leaders/chairs) had more important roles than the others; tutor support provided upon request; a lot of enthusiasm, 'good chemistry' and hard work; very good organisation of work; high responsibility; good distribution of tasks; the advantage of having practised teamwork in another course. Influential factors observed by the tutor in the less successful or unsuccessful teams in Group B were: very little or no tutor support upon request; some members were more interested in the topic than the others; everything done by one or two members, poor time management; a different perception of leadership within the team; tutor's self-initiative intervention to support the team was not very successful; no intermediary report handed in; frequent absences; full-time jobs; engagement in professional sports.

We may thus conclude that various (positive and negative) influential factors contributing to the final result were revealed in this research during the PBL process. The most important positive factors included: enthusiasm; a good team structure, the responsibility and constant presence/involvement of the team members. Among the most important negative factors were absenteeism; full-time and part-time jobs (as a negative factor only with some teams); engagement in professional sport; poor time management and process management generally; not enough time dedicated to problem-solving; poor cooperation, leading to the emergence of sub-teams.

5 Grading system: 1–5 (fail) and 6–10 (pass), 10 as the highest grade.

5 Discussion

In our research, we decided to employ two different approaches to tutoring: directive in the tutor-guided teams in Group A, and non-directive in the self-guided teams with tutor support upon request. We had assumed that better results would be achieved when using the non-directive/self-guided approach with the more autonomous, self-initiative-possessing, co-operative, committed, and enthusiastic students, and in turn better results would come from using the directive/tutor-guided approach with less autonomous, self-initiative, cooperative, committed, and enthusiastic students. However, our study shows that good results were possible in either group if there was a proper combination of suitable tutorship and leadership within the team and the appropriate level of students' commitment to the PBL process. On the other hand, it was demonstrated that poor results were achieved if the tutorship and leadership within the team did not function properly and if commitment was lacking among the team members. We can say that leadership or leading the team was the "locomotive" (Stoner & Freeman, 1992) in the presented PBL process. Moreover, it was also the commitment (Kim & Grunig, 2011), shared responsibility and shared goals that contributed to success in teamwork.

It was thus shown that by the end of the PBL process both tutor-guided and self-guided types of teams had chances of moving along the continuum towards self-guided learning. Still, the self-guided teams must have had some advantage as the starting point was their self-guidance and therefore greater autonomy, and the tutor-guided teams must have learned from the tutor how to guide so that they could move towards autonomy – the tutor as a 'role model'.

One of the aims of this study was to find an appropriate way of promoting students' autonomous learning and self-guidance in PBL to an extent that is realistic in terms of their competencies and motivation/enthusiasm. Therefore, we decided to provide two kinds of tutor guidance – constant tutor guidance and tutor guidance only upon request – and investigated their influence on the students' learning/solving problems in teams, their guidance/leadership, and the final products. We sought to establish how/whether the extent of the tutor's involvement influenced students' success in teamwork, their problem-solving, leadership styles and final products. We also tried to define other influential factors that we were not able to control in this process. In other words, we aimed to determine the differences in the performances of the tutor-guided and self-guided teams receiving tutor support only upon request.

We therefore aimed to answer four research questions. Focusing on the first one, which refers to the difference in the success of teamwork between the tutor-guided teams in Group A and the self-guided teams in Group B, we established that in our PBL setting tutor support in teamwork was needed in both groups, i.e. with the tutor-guided teams as well as with the self-guided teams, given that almost all of the teams had problems organising their teamwork. Further, the self-guided teams that requested some tutor support gained from it. In addition, there were more chances for equal involvement in terms of teamwork in the tutor-guided teams (as the tutor monitored and supported the whole process and encouraged the students to be equally involved in the whole process). PBL is about teamwork. Accordingly, if team members practise groupwork rather than teamwork, the success of the PBL process is

jeopardised. We also noted that not all students managed to master the teamwork, whether due to their inappropriate attitude or commitment or due to a lack of skills. In fact, the skills of some team members were not complementary (Robbins & Judge, 2013), as evident in both the smaller and larger teams in each group. Consequently, in some teams the performance was not collective and the responsibility of team members was more individual than mutual. Further, such an attitude and lack of competencies resulted in losing focus and interest, not sharing the goals with other team members, or dropping-out. In teamwork, communication among team members is of the utmost importance; communicating shared values and goals, sharing perceptions (e.g. of leadership) and identifying/acquiring the skills needed are essential for good performance. Finally, face-to-face communication proved more successful than various types of online communication.

By answering our second research question, which refers to the different problem-solving success in the teams with the tutor-guided approach in Group A and the teams with the self-guided approach in Group B, we established that tutor support in problem-solving was needed or welcome in both groups (tutor-guided and self-guided), namely with less successful (that needed greater assistance) as well as more successful teams. Further, the self-guided teams that requested some tutor support with problem-solving (even though they were unaware that it was about problem-solving[6]) gained from it. This means that there were bigger chances of equal and successful involvement in problem-solving in the tutor-guided teams. There was good cooperation in problem-solving in half of the teams in each set or group while less successful teams had problems with designing research questions and equal involvement in problem-solving. It was established that the tutor support and a suitable model of instructional design improved the problem-solving process (Hung, 2011). There was some 'spontaneous' problem-solving that did not follow the suggested phases of problem-solving in both the tutor-guided and self-guided teams. This would have been welcome if it had produced appropriate results. Yet, in the tutor-guided teams, the team members were generally more willing to follow the research phases presented by the tutor. It was also shown that commitment to solving a problem and enthusiasm enhanced cooperation in problem-solving and the sharing of the studied materials and ideas with others in both sets or groups (Kim & Grunig, 2011).

By answering our third research question, which refers to the various types of leadership applied (internally) by team members and the level of tutor involvement (external guidance) in the teams in each group, we established that in the successful tutor-guided teams the members had either strong or democratic leadership with some tutor support during the whole project; only one team needed quite a lot of support. With the less successful tutor-guided teams, weak – or even confusing (in the larger team) – leadership was experienced by team members. These teams also needed considerable tutor support. This means the highest level of tutor support was needed in the teams with weak leadership, although one team with strong leadership also required constant tutor support. The tutor guided and controlled the process. In the successful self-guided teams, the members applied democratic leadership and took advantage of the tutor support upon request, while the less successful teams had very weak/passive or even no leadership. In terms of tutor involvement in the self-guided teams, only one team requested tutor support at the very beginning and the tutor tried very

6 Some of them simply asked: Do you think this is OK?

hard to interfere with their disorganised process and it was even difficult to contact them due to their frequent absences. Still, the successful teams requested some tutor support and benefited from it.

In terms of internal leadership, the role of the chairperson was even more important in the self-guided teams than the tutor-guided teams where the tutor guided the process and/or shared the guidance with the chairpersons. However, the role of the chairperson and their leadership also remained important with the tutor-guided teams. Unfortunately, there was no or no proper leadership in some teams, especially in the self-guided ones. All in all, the better the internal leadership, the higher the chances for the higher level of the team's autonomy or self-guidance, and the higher the chances for the lower level of tutor support. Further, a proper combination of tutorship and internal leadership led to a successful PBL process. In a PBL process, leadership is important in managing tasks, which supports Stoner and Freeman's idea (1992) of leadership/leading being the "locomotive" (Stoner & Freeman, 1992) among the four management functions. In terms of tutoring or teacher behaviour, we could say that with the tutor-guided teams the tutor followed the model in which they unilaterally designed the teaching environment and controlled it. Yet, with the self-guided teams the tutor followed the model in which the students designed situations or environments where they could be originators and could experience high personal causation, where tasks were controlled jointly (Caine & Caine, as cited in Day, 1999). Moreover, in the successful self-guided teams with tutor support only upon request, the line between leading and following was blurred (Northfield, as cited in Duignan & Macpherson, 1992).

By answering our fourth research question, which refers to potential significant differences in the performances of the teams in Group A and Group B, and the influential factors, our results revealed certain differences and similarities between the tutor-guided and self-guided teams.

The biggest difference was that in the self-guided teams there were more threats for the teams in terms of failure (not completing the process successfully or sufficiently), although only one self-guided team failed to complete the process. In this respect, these teams may have been disadvantaged or simply needed more time to complete the process. On the other hand, the self-guided teams had more opportunities to experience high personal causation (Schön, as cited in Day, 1999), which only two of the self-guided teams took advantage of. Opportunities for quite high personal causation also appeared in the tutor-guided teams that needed very little tutor support.

As concerns successful completion, there were some similarities between the tutor-guided and self-guided teams: only half the tutor-guided teams performed well while the other half achieved poor results, and the same was true for the self-guided teams. These similarities show there were other influencing factors at play which could not be controlled in the presented process. Another explanation for these similarities could be our 'convenient' division into two groups, even though the tutor changed and adjusted the planned guidance during the process when needed (especially in some self-guided teams and to a small extent also in some tutor-guided teams). Many of the factors that influenced the teams' final performance and success were unpredictable and we were unable to control them: e.g. absenteeism, forming of sub-teams, other priorities (sport, work).

The limitation of this study refers to the size of the teams in each group (set) as group/team dynamics are different in pairs (teams of two students) than in teams of more than two students. Still, that was not an issue the tutor could influence. To sum up, the drop-outs acted as limitations.

6 Conclusion

As our criteria for choosing two different types of guidance were self-initiative and enthusiasm – perceived as being much higher by the tutor in Group B (self-guided teams) during its first year of study than in Group A (tutor-guided teams) – with the aim of observing the success of teamwork and problem-solving, we expected a higher performance from the self-guided teams. However, the performance was mixed. There were well-performing teams in Groups A and B; nevertheless, there were greater chances of both autonomous learning and failure in Group B. Good leadership, enthusiasm and responsible as well as competent or 'knowledgeable' teamwork proved as important factors in the students' success. Yet the frequent absenteeism of two self-guided teams meant the enthusiastic spirit could not be spread to them within the team (during their work in the same class). This might also partly explain why more than expected tutor support was needed in the teams of the group that was perceived to be very enthusiastic about their studies a year earlier. The 'success' of the chosen independent variable – either tutor support or tutor support upon request – was thus influenced by many factors. We can say that tutor observation or scaffolding and proper decision-making (e.g. whether and/or to what extent to support the teams' learning and to interfere) at the right moment were crucial.

What we also learned in this research is that the tutor and team members should be ready for the unexpected; they should strive to control all (or most) of the emerging influential factors, and accordingly adapt their actions and/or roles. Nonetheless, they should constantly have a clear idea about the whole PBL process and its goals. One important finding is that the students' situations keep changing. They had changed from the previous year, with what having changed for some students being enthusiasm and commitment, focus, willingness or opportunities to dedicate time to the project. These factors were also among our criteria for dividing the students into two groups. Should we completely change our approach or is it acceptable to let students fail? The responsibility in PBL is shared and ultimately it remains with the team members and is strongly influenced by their commitment, sharing of goals and responsibilities and abilities as team members and problem solvers. It is the tutor's responsibility to monitor the process, provide feedback and respond to the students' activities when needed, even if they have to intervene when there are no requests for tutor support from the students.

Moreover, the tutor's constant training and self-study of the theory and reports on successful/unsuccessful practices in this field are required. To improve our work, moving 'backwards and forwards' between the theory and practice could prove extremely beneficial. To choose the right 'balance' in tutor involvement and maintain the students' motivation, the tutor strives to revisit, adjust, renew or revive the process and the roles as well as keep setting high standards for successful problem-solving and teamwork.

The results of this study can thus help teachers/tutors become aware and pay attention to some factors that could influence the teacher's/tutor's decisions on the level of their involvement, support and type of guidance or tutorship. More research into the relationship or mutual influence between the type of tutoring and the type of internal leadership (within-team leadership) would be welcome.

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