

PAPER • OPEN ACCESS

The implementation of Problem Based Learning (PBL) to develop student's soft-skills

To cite this article: D P N Brata and A K Mahatmaharti 2020 *J. Phys.: Conf. Ser.* **1464** 012020

View the [article online](#) for updates and enhancements.

You may also like

- [The roles of the metallurgy, nonmetal products and chemical industry sectors in air pollutant emissions in China](#)
Haozhe Yang, Ying Liu, Junfeng Liu et al.
- [The increase of students' critical thinking abilities on optical instrument topic through pbl-stem with virtual simulation media](#)
Parno, S Fauziyah, N A Pramono et al.
- [Impact of aerosol-meteorology interactions on fine particle pollution during China's severe haze episode in January 2013](#)
Jiandong Wang, Shuxiao Wang, Jingkun Jiang et al.

ECS Toyota Young Investigator Fellowship

For young professionals and scholars pursuing research in batteries, fuel cells and hydrogen, and future sustainable technologies.

At least one \$50,000 fellowship is available annually.
More than \$1.4 million awarded since 2015!



Application deadline: January 31, 2023



TOYOTA

Learn more. Apply today!

The implementation of Problem Based Learning (PBL) to develop student's soft-skills

D P N Brata^{1*}, A K Mahatmaharti¹

¹STKIP PGRI Jombang, Jl. Patimura III No 20 Jombang, Indonesia

*pujidiyah37@yahoo.com

Abstract. Currently, various implementation of higher education curriculum is still oriented at development of hard skills. Meanwhile, global market requires graduates with both hard skills and soft skills. Graduates' soft skills are mainly affected by teaching strategy and model used by their lecturers. This current research aims at describing the implementation of a teaching model, i.e. Problem-based Learning (PBL) and effects of the teaching model on students' soft skills. Descriptive qualitative was employed as the research approach. Triangulation of data source and method was implemented to collect the data, and case study was used to analyze the data. This research resulted that the implementation of PBL in Anthropology Course is learning in which problems are presented to reconstruct the culture of rural community. Students worked in a team to solve authentic problems in a community, developed and presented their way of solving the problems, as well as evaluated the process of solving the problems. The effect of the implementation of PBL was the students understood the course material contextually, were skillful in collecting qualitative data, were more knowledgeable in facing the village community, improved their soft skills in terms of written and spoken communication, a way of thinking (critical, creative, and logic), problem solving skills, team working, and interpersonal and work ethics. As an effort of strengthening students' characters to face revolution industry 4.0, this research showed that graduates should have skills of 4 Cs (Critical Thinking, Creativity, Communication, and Collaboration Skills).

1. Introduction

Related to Law on the National Education System No. 20/2003 Act number 3 explains that national education functions to develop capability, character and civilization of the nation for enhancing its intellectual capacity, and it aimed at developing students' potential so that they become persons imbued with human values who are faithful and pious to one and only God, which possess morals and noble character, who are healthy, knowledgeable, competent, creative, independent, and as citizens, are democratic and responsible. To create those laws, the novelty of national education system must be developed to empower students to be persons with noble characters and quality.

Based on Law on the National Education System No. 12/2012, the higher education aims to be a person who has faith and piety to God only, which possesses noble, healthy, knowledgeable, capable, creative, independent, skillful, competent, and owns culture for the benefit of the nation. To create the purpose, universities must be able to act as learning centers which provide students with theory and practice combining high-level knowledge and skills that are constantly adapted to meet the needs of workforce. Based on Law on the National Education System No 44/2015 concerning the National Standards for Higher Education, graduate competency standards are the minimum criteria regarding the



qualifications of graduates' abilities which include knowledge, attitudes, and skills stated in the formulation of learning outcomes. The provision is of course the learning process in Higher Education must be able to develop students' ability and it is implemented in the form of structured and systematic learning construction.

However, the condition of the learning process in higher education focused more on cognitive aspects than attitude and psychomotor aspects. The impact of the learning process is that the students succeed in memorizing, but unable to deal with problem solving of real life, because they are not taught or practiced how to solve problems. The results of preliminary study on Anthropology Course were that the students lacked the ability to think critically when the real problems related to subject was given, the formation of groups in practical work still showed collaboration less optimal team and still dominated by active students, and oral communication in presentation activities is not optimal because of lack of confidence.

The condition of higher education described previously is in line with [1] that the learning process focuses more on aspect of knowledge (knowledge transformation), or prioritizing of hard skills, lacks soft skills. Improvement of students' soft skills can be done by combining soft skills and hard skills in the learning process.

Construction of learning to develop students' soft skills emphasizes activities that can develop students' soft skills, for example the lecturer builds active two ways interaction between the lecturer and the students, develop team working among the students, and provide wide opportunities to improve themselves. Soft skill is a set of abilities that influence how individuals can interact with others. Soft skill contains effective communication, creative and critical thinking, team building, and other abilities related to individual personality capacity [2].

In developing student active interaction and collaboration, lecturer can implement Problem-based Learning (PBL) model which is one alternative to develop students' soft skills. PBL is a learning model presenting contextual problems so that the problems stimulated the students to learn in teams to solve real world problems (Ministry of Education: 2013). According to [3] PBL will involve more process of stimulating high cognitive levels and familiarizing students with critical thinking.

Results of previous studies concerning PBL includes; [4] showing that the students regarded PBL as realistic, fun, and interesting method of learning, [5] research revealed that PBL had a significant effect on soft skills. PBL implemented in an appropriate way would improve students' soft skills. [1] showed that the application of PBL as a learning model can improve students' soft skills, learning activities, learning outcomes. Besides, students give positive responses to the effort of soft skills development implemented through cooperative learning.

The explanation of the background above become the interest of researchers to further examine the effect of PBL implementation on the development of soft skills of 2015 students on Anthropology course in Academic Year 2017/2018 at STKIP PGRI Jombang. Aiming at strengthening the result of a research conducted by the researchers in 2015 in Indonesian Society Study Course, the current research uses PBL model in Anthropology course in which the students have different characteristics and backgrounds compared to students taking Society Study Course.

2. Method

This research is a qualitative research with a holistic and in depth approach, presenting process and essence of meaning at every event occurring as research setting. The research subjects were 2015 students of PPKn department at STKIP PGRI Jombang. The subject selection was done through snowball sampling. Data collection techniques includes in-depth interviews, observation, and documentation (triangulation of data source and method). This research employs case study design (individual case) based on the design of Miles and Huberman (1984) which covers (1) data reduction, (2) data presentation, and (3) conclusion. Data analysis is done in an interrelated and repetitive way during and after data collection.

3. Research Results and Discussion

The phases in PBL learning model which focus on problem solving exhibit learning experiences that are challenging and require time management. Based on quantitative assessment rubric for writing the observation report, the mean score of students' ability to write the observation was 87. The results of student articles show scientific essays fulfilling scientific rules. The impact of implementing PBL learning models for students related to soft skills is:

Students understood the material contextually, the lecturer arranged and chose the course material based on concepts, terms, understanding, principles, procedures, and illustrations of culture and its elements. Student learning experiences to collect data on cultural elements in rural communities with qualitative data have an impact on understanding material more clearly, real, and comprehensively. Students are able to explain in detail examples of cultural elements for logical reasons.

Students shows their skills in collecting qualitative data. It is resulted in the ability of developing interview guide, observation guide, administering interview to the villagers, analysing data based on triangulation of data source and method to provide internal validity.

Students have insight to face village communities directly. The impact of which includes increasing students' insight into communication strategies, characteristics of the village community, behavioural patterns, good language methods, how to adapt. The student learning experience is very needed as a qualified output of graduates. Another impact of implementing PBL is improvement of student soft skills on the development of oral and written communication, critical thinking skills, creative and logical, problem solving skills, teamwork and interpersonal collaboration, and work ethics. Student soft skills can be formed through a process and no ending process.

Increased problem solving skills, teamwork and interpersonal collaboration are also found in PBL learning model. Student learning experience from all phases of PBL model learning, essentially how students are able to solve problems and how teamwork with various backgrounds of different student personalities. Student behaviour patterns must show cooperation, tolerance, adaptation, commitment. A clear description of the division of tasks, good time management can reinforce these behavioural patterns. Increasing the ability of work ethics, especially in the learning phase to carry out the investigation and presentation of the work. Student work ethics is an absolute value that must be adhered to when studying outside campus, including responsibility, hard work, honesty, discipline, tolerance, and courtesy.

The finding of the current study about implementation of PBL learning model reveals collaboration between the lecturer and the students can be analysed from [6] mentions that the implementation of PBL learning model requires readiness of lecturers and student to be able to collaborate in solving problems. Lecturers must be ready to be a mentor and tutor who can provide motivation, enthusiasm, and help master problem solving skills for students. Students must be prepared to undergo each stage of the PBL learning model, to obtain the knowledge and skills needed in complex life situations.

Research findings on the impact of implementing PBL learning model shows the students' understanding about the contextual materials and increased insight of the concept of village society can be analysed from the opinion of Arends in [7] that identify 6 advantages of PBL learning models, namely: (1) students understand better the concepts learned because students find the concept themselves, (2) it requires high-level skills in solving problems, (3) embedded knowledge based on schemes owned by students so that learning is more meaningful, (4) students can feel the benefits of learning because the problems studied (5) it makes the students more independent, more mature, motivated, able to inspire and accept the opinions of others, and in still positive social attitudes among students, and (6) it allows the students in learning through interacting learning groups as well friends who can make students easier to achieve mastery learning.

[8] stated that currently students who have high GPA are not necessarily students who have good character. Students often get theory or knowledge in learning and must explore various sources of literature to strengthen understanding of knowledge, students should practice positive norms of theories

learned into the real world. Building strong human resources requires the integration of appropriate character education and collaboration among government, society, family and schools.

The findings of the study on the impact of applying PBL learning models that can improve student soft skills, can be analysed from the opinion of Barrows in [9]. He suggests that PBL learning model provides students with problems and tasks, and through he problem solving processes they are expected to obtain the required knowledge and skills. The PBL learning model aims at developing and applying problem solving skills, self-study, teamwork, and extensive acquisition of knowledge. [8] argues that character education or soft skills must be integrated, prioritized in all aspects of university life, with the aim that students in all speeches, attitudes, and behaviours reflect good and strong character. [6] suggests that PBL learning model helps improve the development of lifelong learning skills in an open, reflective, critical, and active learning mind set. PBL learning models facilitate the success of problem solving, communication, group work and interpersonal skills better than other approaches. [10] argues that higher education institutions that have a role to increase human resources are expected to be a forum to strengthen the competence and excellence of graduates through improving soft skills. Consequently as a form of institutional responsibility, students must be given the opportunity to carry out the learning process that is able to develop hard skills and soft skills to meet the demands of the workforce, as well as having the ability to create jobs independently.

4. Conclusion

The implementation of learning model based on phases or syntaxes of PBL learning model includes; (1) orienting students to the problems, (2) organizing students to learn, (3) guiding individual and group investigation, (4) developing and presenting the work, (5) developing and evaluating the process of problem solving.

The effect of the implementation of PBL learning model related to students' soft skills is that the students understand the materials contextually, the practice of collecting data of qualitative method, gaining more insight in facing village communities directly, increasing students' soft skills in developing spoken and written communication, ability of critical thinking, creative and logic, ability to solve problems, ability to work in a team, and ability of interpersonal and work ethic.

For STKIP PGRI Jombang, the result of the study suggested to: (1) carry out a comprehensive transformation to students in order to have soft skills that support the institution's vision and mission, through mentoring, habituating normative behavior, and forming learning forums, (2) provide facilities to improve lecturers' professional competencies to improve the quality of the institution through training, seminars, learning workshops that are oriented towards improving students' soft skills in the era of industry 4.0.

For the lecturers, the result of the study suggested to: (1) develop construction of soft skills-based learning by applying Student Center Learning (SCL) based learning models to improve students' soft skills, (2) improve the lecturers' professionalism especially on pedagogical competencies to improve learning quality.

For LL DIKTI Region VII as a service and supervise board of Ministry of Higher Education, Research, and Technology, it is recommended to make programs related to improvement of lecturers' professionalism.

References

- [1] Ketut Sudiana I 2012 Upaya Pengembangan Soft Skills Melalui Implementasi Model Pembelajaran Kooperatif Untuk Peningkatan Aktivitas dan Hasil Belajar Mahasiswa pada Pembelajaran Kimia Dasar *Pendidik. Indones.* **1** 91–101
- [2] Arnata I and Surjoseputro S 2014 Evaluasi Soft Skills Dalam Pembelajaran Mahasiswa Baru Di Fakultas Teknologi Pertanian Universitas Udayana *J. Pendidik. dan Pembelajaran* **21** 01–9

- [3] Crystal W 1999 *E . aching Change*
- [4] Shin I S and Kim J H 2013 The effect of problem-based learning in nursing education: A meta-analysis *Adv. Heal. Sci. Educ.* **18** 1103–20
- [5] Hamdan A R, Kwan C L, Khan A, Ghafar M N A and Sihes A J 2014 Implementation of problem based learning among nursing students *Int. Educ. Stud.* **7** 136–42
- [6] Sobri A Y 2016 Model-Model Pengembangan Profesionalisme Guru *Konvensi Nas. Pendidik. Indones. VIII Tahun 2016* **4** 55–67
- [7] Riyanto S 2012 Dutch-Indonesian interlanguage Psycholinguistic study on syntax *Wacana, J. Humanit. Indones.* **14** 154
- [8] Muhmin A H 2018 Pentingnya Pengembangan Soft Skills Mahasiswa Di Perguruan Tinggi *Forum Ilm.* **15** 330–8
- [9] Mulyono M 2018 Keefektifan Metode Problem Based Learning Dalam Pembelajaran Fiqih Di Perguruan Tinggi *CENDEKIA J. Stud. Keislam.* **2**
- [10] Anon Buku Melejitkan SOFT SKILLS Mahasiswa.pdf