

Students' Perception on Implementation of Problem-based Learning in the Faculty of Medicine, Swadaya Gunung Jati University, Cirebon, Indonesia

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ABSTRACT

Introduction: Problem-based learning is a learning method that has been adopted by medical school in countries worldwide, including Indonesia. Problem-based learning implementation in Asian countries has different challenges compared to Western countries. Factors such as culture may influence students' perception on problem-based learning and its implementation. This study aimed to describe the students' perception on problem-based learning implementation in the Faculty of Medicine, Swadaya Gunung Jati University.

Material and methods: Conducted in academic year 2018-2019, this was a preliminary descriptive study involving 95 students from first to third year of Faculty of Medicine, Swadaya Gunung Jati University. The students' perception was assessed by using questionnaire and by observation through focused-group discussion.

Results: Majority of students (98.0%) agree that problem-based learning is an appropriate learning method for medical students and that it supports student-centered learning. Compared to conventional lecture, most students (87.4%) also agree that problem-based learning helps them to obtain broader knowledge than conventional lecture, with 85.3% stated that memory gained from the problem-based learning method was more durable. Focused-group discussion showed that the obstacles in problem-based learning process are difficulty in determining questions to achieve learning goals, monotonous discussion, unbalanced contribution of participants', dependence to students' characteristics, and lack of comprehensive feedback from some tutors.

Conclusions: Despite some challenges faced in problem-based learning implementation, students of Faculty of Medicine of Swadaya Gunung Jati University perceived positive toward PBL and agreed that this learning method offers many benefits for them.

Keywords: Students' Perception, Problem-Based Learning, Medical School

different challenges. Cultural factors can influence the characteristics of students and learning activities so that PBL implementation may differ from those in developed countries.²

During its process, PBL must contain four learning principles which are constructive, collaborative, contextual, and self-learning. Constructive learning means that the learning method should facilitate students to compose their own knowledges. For this purpose, the facilitator or tutor's role is to ensure that students could gain enough learning experience in order to build up their knowing. Collaborative learning is learning done in small groups allowing its members to exchange opinions and to share their knowing in order to identify their learning needs and to draw up the knowledge.^{2,3} Some of institutions modify the PBL by dividing students into groups of four or five students per table in separate groups in a seminar room, the method called collaborative PBL.⁴ Collaborative learning requires a good teamwork, thus all the shared knowledges can be elaborative and integrative. The third component is contextual learning, meaning that the knowledge could be applied to the context and that the learning is also aimed to ease the knowledge transfer.⁵ The last principle is self-directed learning of which they are supposed to be independent in arranging their own learning activities including planning, monitoring, implementation, and evaluation.^{2,6}

PBL implementation on all four principles can effectively be performed if the environment favours the process, including independent learning and equality between the students and the professors. In Western or European countries, the learning environments mentioned-above fit well with the

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western culture, while in Asians do not necessarily do. Asian countries like Indonesia, hold onto eastern culture, where the majority of students would fear the professors and are scared to utter their knowledge. In Indonesia, specifically in Javanese culture, young people are expected to respect older and more senior people. Besides, in most of their previous level of education in the high school, they have not used to conduct self-learning independently and have lack of confidence.²

Located in Cirebon City, in the middle between West Java and Central Java Provinces of Indonesia, Faculty of Medicine of Swadaya Gunung Jati University consists of students from various regions with various culture of Indonesia. At this medical school, PBL has been implemented since the first time the institution was established in 2008. As the institution is growing bigger while realizing the possible culture impact on PBL implementation, this preliminary study was conducted to evaluate students' perception on PBL implementation.

MATERIAL AND METHODS

This preliminary descriptive study was approved by Ethical Committee of Faculty of Medicine of Swadaya Gunung Jati University No. 17/EC/FK/IV/2018. The study was conducted in the academic year 2018-2019. All respondents' written informed consent were obtained before questionnaire were distributed to the first to forth year students in Faculty of Medicine of Swadaya Gunung Jati University, Cirebon, Indonesia, to assess their perception on PBL implementation. Questionnaire statements are divided into five aspects: PBL method, module, process, formative evaluation, and also PBL benefit. The value assessed in for each statement in the questionnaire is based on Likert scale ranging from 1-4. Likert scale used in this study ranged from 1 to 4, where 1 means Strongly Disagree and 4 is Strongly Agree. Score neutral was not used in this study in order to more clearly define the positive (good) and negative (bad) perception. The total of 95 students were involved in the study using stratified random sampling. Beside the questionnaire, observation through focused-group discussion (FGD) was also performed to obtain the students' perception which cannot be gathered with questionnaire.

RESULTS

Ninety-five students of the first, second, and third year answered the questionnaire given regarding their perception on PBL. Table 1 describes the characteristics of the respondents included in this study. Out of 95 respondents, majority are Javanese (46.3%) which come from both Central and East Java, while the fewest culture representative comes from other than Sumatera, Java, and Borneo Islands.

Table 2 describes the questionnaire's statements and the average score of Likert scale obtained from the respondents concerning their perception about PBL in general and also its four aspects (PBL module, process, formative evaluation, and benefit). Likert scale used in this study ranged from 1 to 4, where 1 means Strongly Disagree and 4 is Strongly Agree. Score neutral was not used in this study in order to more clearly define the positive (good) and negative (bad) perception. In general, good perceptions on PBL were scored high, while bad perceptions on PBL were low. Specifically for perception on PBL module, overall perceived that the scenarios in the modules have been able to stimulate them to be more active in learning and well represented the problems in daily life. However, it has also been expected that the PBL module quality must be developed more and better. Regarding the perception on PBL process, majority agreed that it has been conducted well, however some stated that the given time allocation is not sufficient enough and also anticipated more feedback at the end of discussion.

Focused-group discussion in this study showed that the obstacles in PBL process are difficulty in determining questions to achieve learning goals, monotonous discussion, uneven distribution of PBL group participants and contribution, its dependence to students' characteristics, and the lack of comprehensive feedback from tutors.

DISCUSSION

This descriptive study is the preliminary study regarding quality assurance on PBL implementation in the Faculty of Medicine of Swadaya Gunung Jati University to ensure its refine process. At this medical school, PBL is conducted twice in a week with two hours session each. Each module or block consists of 4 scenarios with each scenario takes 2 sessions of PBL tutorial/discussion. PBL process is always

Characteristics	1 st year (n)	2 nd year (n)	3 rd year (n)	Total n (%)
Sex				
Male	12	14	9	35 (36.8)
Female	19	20	21	60 (63.2)
Region of origin/Culture				
Sumatera	3	3	4	10 (10.5)
Jakarta	2	8	3	13 (13.7)
West Java (Sundanese)	6	4	3	13 (13.7)
Central and East Java (Javanese)	14	15	15	44 (46.3)
Borneo	4	4	2	10 (10.5)
Others	2	0	3	5 (5.3)

Table-1: Characteristics of the respondents in the study

No.	Statements in the questionnaire	Score
I. General perception on PBL		
1.	PBL is a suitable learning method for medical students	3.26
2.	Students learn and understand well with PBL	3.14
3.	PBL steps and concept have been socialized by tutors/PBL coordinator	3.13
4.	PBL strongly supports student-centered learning very much	3.26
5.	PBL can be applied to cases other than in the scenario	3.08
6.	Student-centered learning facilitates students to do literature search	2.73
7.	PBL helps students to get used to independent learning	3.33
II. Perception on PBL module		
1.	Sentences in the scenario are easy to understand	2.87
2.	Scenarios are appropriate in regards with learning objectives	2.73
3.	Learning goals fit with the given scenario	2.87
4.	Scenario triggers/problems are often found in daily life	2.97
5.	Scenario stimulates students to be active in the discussion	3.01
6.	References mentioned in the module are available in the library	2.41
7.	Scenario numbers are too few	1.97
III. Perception on PBL process		
1.	I have already prepared literature sources a night before the discussion	3.22
2.	I have studied the given scenario before the discussion	3.25
3.	At the beginning of the discussion, tutor has introduced him/herself	2.97
4.	Tutor gives the choice of being the moderator and the secretary to the group	3.31
5.	Tutor has led students well	3.04
6.	I understand well the roles and tasks of being moderator and secretary of discussion	3.26
7.	Group members always raise hand when they want to ask question or to share knowledge	3.27
8.	Before determining the problem in the module, the group describes the keywords/conducts terms clarification	3.35
9.	Learning goals are arranged clearly	3.01
10.	Questions are raised in accordance with keywords	2.95
11.	I study only one learning goal that has been assigned to me	2.25
12.	At the end of discussion, tutor renders feedback on the discussion	2.94
13.	Time allocation is fairly enough for discussion	2.91
IV. Perception on PBL formative evaluation		
1.	Evaluation in the discussion covering the aspects of sharing, giving arguments, students' activity, domination in the group, collaboration, discipline, communication, and attitudes	3.28
2.	Assessment system has already been informed	2.96
3.	Assignment on PBL resume is included in the assessment with small percentage	2.89
4.	Assessment weight is appropriate with the burden of the tasks	2.63
5.	The final report of PBL discussion is too much	2.97
6.	Due date of PBL final report handing is fair	2.55
7.	PBL final report is a summary of several literatures	2.99
V. Perception on PBL benefit		
1.	PBL helps my knowledge grow better and broader compared with conventional lecture	3.14
2.	Panel discussion with the experts helps to resolve unsettled problems faced in the group discussion	2.79
3.	My learning materials come from discussion result of all groups	2.81
4.	My learning materials become more complete	3.01
5.	Memory gained from PBL is more durable	3.09
6.	I come to realize that learning is a need	3.45
7.	PBL is useful to adapt with independent learning	3.42
8.	PBL only adds burden up and not beneficial	2.04
9.	PBL makes me learn deeper	3.23

Table-2: Students' perception on PBL

evaluated both by formative and summative assessment. Formative evaluation is performed in every PBL discussion, covering the points of sharing, giving arguments, students' activity, domination in the group, collaboration, discipline, communication, and attitudes. Summative assessment is done at the end of the module by conducting Objective-Structured Oral Case Analysis (OSOCA) examination.

This study revealed that the perception of students' in the Faculty of Medicine of Swadaya Gunung Jati University on PBL overall is positive. Out of 95 students, 93 agreed that PBL is a learning method suitable for medical students allowing student-centered learning as described in the table 2. This result is in accordance with previous study⁶ indicating that despite students comes from different region

of the world, PBL benefit is objectively emerged.^{3,7-10} Most of students agree that PBL module is helpful to support the PBL implementation. Most of students stated that they have already prepared the materials correlated with the scenario in the night before the discussion day. Previously it was shown that PBL discussion can help students to understand the trigger problem more clearly^{8,11}, thus they learn deeper and the memory can stay longer.

Several challenges were identified with focused-group discussion in this study. One of the problems faced was uneven distribution of PBL group participants and contribution. This remarks the important of appropriate mix of students in a group of PBL.¹² Faculty of Medicine of Swadaya Gunung Jati University consists of students from various regions with various culture of Indonesia. Previous studies found that the socio-cultural environment contributes to an important role in the student learning process. This is important to note, as one of Asian countries holding to east culture, Indonesian people put high respect to traditions. Respecting older people and their higher position makes students tend to believe and follow their opinions. Students become less confident when discussing with peers even sometimes students do not believe in their own opinions.² This tendency could cause the PBL discussion does not run optimally, even though students realize the benefits of PBL.⁶ Among the limitation of this study is that the factors that might contribute to the students' perception and also PBL implementation have not evaluated yet. As the institution grows bigger with more numbers of students coming in, further studies with larger samples are needed to assess the drawback of the PBL implementation and to seek for the tools required enabling its improvement.

CONCLUSION

Despite some challenges faced in problem-based learning implementation, students of Faculty of Medicine of Swadaya Gunung Jati University perceived positive toward PBL and agreed that this learning method offers many benefits for them.

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REFERENCES

1. Abdelkarim A, Schween D, Ford T. Implementation of problem-based learning by faculty members at 12 U.S. medical and dental schools. *Journal of Dental Education*. 2016;80:1301-7.
2. Wahid M, Kumara A, Prihatiningsih TS, Rahayu GR, Mustika R, Felaza E. Students' perceptions on problem-based learning implementation: A case study at an Indonesian medical school. 2014;18:171-83.
3. Kim YJ. Observational application comparing problem-based learning with the conventional teaching method for clinical acupuncture education. *Evidence-Based Complementary and Alternative Medicine*.

2019;2019:1-7.

4. Win NN, Nadarajah VDV, Win DK. The implementation of problem-based learning in collaborative groups in a chiropractic program in Malaysia. *J Educ Eval Health Prof* 2015;12:1-6.
5. Ibrahim ME, Al-Shahrani AM. Implementing of a problem-based learning strategy in a Saudi medical school: requisites and challenges. *International Journal of Medical Education*. 2018;9:83-5.
6. Sun J, Chen Y-J, Wu Y-Z. Application and evaluation of problem-based learning in undergraduate clinical education in 2014-2018. *MedEdPublish*. 2018.
7. Hu X, Zhang H, Song Y, Wu C, Yang Q, Shi Z, et al. Implementation of flipped classroom combined with problem-based learning: an approach to promote learning about hyperthyroidism in the endocrinology internship. *BMC Medical Education*. 2019;19:1-8.
8. Zhang Y, Zhou L, Liu X, Liu L, Wu Y, Zhao Z, et al. The effectiveness of the problem-based learning teaching model for use in introductory Chinese undergraduate medical courses: A systematic review and meta-analysis. *PLoS ONE*. 2015;10:1-24.
9. Zhang S, Xu J, Wang H, Zhang D, Zhang Q, Zou L. Effects of problem-based learning in Chinese radiology education: A systematic review and meta-analysis. *Medicine (Baltimore)*. 2018;97:1-6.
10. Imanieh MH, Dehghani SM, Sobhani AR, Haghghat M. Evaluation of problem-based learning in medical students' education. *Journal of Advances in Medical Education & Professionalism*. 2014;2:1-5.
11. Zin WHWM, Williams A, Sher W. Students' perceptions of their initial PBL experiences in engineering education in Malaysia. *Proceedings of the 2013 AAEE Conference*. 2013.
12. Yeo R. Problem-based learning: Lessons for administrators, educators and learners. *International Journal of Educational Management*. 2005;19:541-51.

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