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Students' Perception to Tutors' Role in Problem Based Learning

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ABSTRACT

Introduction: Studies show that student perception is an important determinant of student behaviour. Understanding the students' perception is very useful for teachers to determine the appropriate learning approach for their students. The aim of this study is to find the effect of epistemological belief factor on students' perception to tutors' role in PBL tutorial discussion.
Methods: This research is a qualitative research about student perception of tutor 's role in Problem Based Learning discussion. Respondents for this study consisted of 18 medical students that were divided into two groups based on their epistemological belief maturity level. Data were obtained through in-depth interviews with the respondents about their perception and expectations of how the tutor should works in accompanying students during the Problem Based Learning discussion. Data were analyzed using thematic content analysis.
Results: The results show that students' perceptions of tutor's role are influenced by the differences of their problem-solving strategies. Students with simple knowledge perspective have the perception that the ideal tutor is a tutor who can make the discussions become structured and more orderly. Meanwhile, the group of students with mature epistemological beliefs argue that ideal tutors are the ones who can do critical analysis during Problem Based Learning discussion.
Conclusion: The results of this study indicate that there is influence of epistemological belief maturity level to the students' perception to tutors' role in Problem Based Learning discussion.

Keywords: Epistemological Belief; Students' Perception; Problem Based Learning; Tutor's Role; Student Centered Learning

INTRODUCTION

Contructivism is a concept that seeing knowledge as a thing that must be constructed by the learners and cannot simply given by the teacher. Learning is an active process of developing meaning based on individual personal experiences. Knowledge is a personal understanding of the world through personal experiences[1,2,3,4]. Constructivist conception doesn't use traditional or instructional teaching anymore. The teaching and learning strategy that fit with constructivist conception is student centered learning. In student centered learning student will participate actively in their learning process by using collaborative learning with their peer. Through this activity learners can develop critical thinking skills and self directed learning [4,5,6].

The most well-known constructivist and student centered learning approach in education is Problem Based learning (PBL). In PBL, small groups of students learn to solve a contextual and meaningful problem[7]. During PBL discussion, students are no longer become a passive receiver. They are become an active learner. They become an inquiries and problem solvers, and becoming an

inspirator of their own learning. This process is consistent with the principles of student centered learning. Student-centered learning moves students from passive receivers of information to active participants in their own discovery process. What students learn, how they learn it and how their learning is assessed are all driven by each individual student's needs and abilities. In the student-centered learning, role of the teacher became changed. Teachers acted as learning process guides and no longer as informers[8,9,10,11].

As a student-centered learning, PBL focuses on active learning and self-directed learning (SDL), hence, SDL is a very important component[12,13]. SDL is a students readiness to engage in learning activities. The readiness is cultivated by the students themselves and not by the teacher. In SDL the students play an active role in planning, monitoring, and evaluation their own learning process [14,15]. The PBL system will work best if students and lecturers understand the factors that influence learning. These factors are motivation, reflection,lifelong learning, and more importantly they are aware of their role in the learning process[16]. The teacher turned from a person who shares information or knowledge into a counselor or a guide for the students. This awareness of role changing is one of the important contributors to the success of students' self directed learning[17].

There has been so many research conducted on how teachers perceive their roles in teaching and learning. The research show that there is one thing that could affect teachers' perceptions, namely their epistemological beliefs. Many educators agree that teachers' beliefs can influence the way teachers teach[18]. Research on teacher beliefs has been one of the main concerns for the study of teacher instruction and education[19]. There is increasing evidence suggest that it is important to pay attention to teachers' epistemological beliefs as this will affect teacher performance in the classroom[20,21]. Several studies have shown that the epistemological beliefs of teachers greatly influence their choice and decision in the classroom. The methods that they are use, how they manage the classroom, the decision on what they have to focus in learning , are all influenced by the teacher's beliefs about his beliefs about knowledge and its acquisitions [22]

Meanwhile, only few studies have examined the effect of epistemological beliefs on the students' perspective on the role of students and tutors in the learning process that is using constructivism paradigm. This research is intended to examine the students perception about the role of tutors in PBL learning, based on students' epistemological belief maturity level.

METHOD

This research was held at the Faculty of Medicine Universitas Sebelas Maret (FK UNS). The respondents were divided into 2 group based on their epistemological belief maturity. Students with simple knowledge [23], hereinafter referred to students with naive epistemological belief and students who do not have simple knowledge, hereinafter referred to as students with mature epistemological belief. The respondents of this research are undergraduate medical students of Universitas Sebelas Maret which are in the 1st, 2nd, and 3rd years.

Table 1. Description of respondents

Respondents	1st year student		2nd student		3rd year student		Total
	Male	Female	Male	Female	Male	Female	
Students with mature epistemological belief	1	1	1	2	4	-	9
Students with naive epistemological belief	1	2	1	2	1	2	9
Total	5		6		7		18

This level maturity of students' epistemological belief is determined based on the score of Schoemmer epistemological belief questionnaire [24], which has been translated into Indonesian. In tis study, students with simple knowledge are students with the results of Schoemmer's epistemological belief questionnaire which shows scores above 3 for avoiding ambiguity subset, seek single answers subset, avoiding integration subset, and depending on authority subset. Meanwhile, others who do not have simple knowledge re students who have scores less than 3 in the subsets mentioned above. From that process, it was obtained 9 respondents with naive epistemological belief and 9 respondents with mature epistemological belief. It was then obtained 9 respondents for students with naïve epistemological belief and 9 respondents for students with mature epistemological belief. Data collection was done by depth interviews. These interviews were conducted to find out the students' perception and opinions about the tutor roles in PBL discussion. Futhermore a thematic content analysis was conducted to analyze the students' interview.

This research was ethically approved by Faculty of Medicine, Public Health and Nursing, Universitas Gajah Mada, Indonesia.

RESULT

The results of students interviews shows that according to both group of students with mature and naive epistemological belief, good tutors are someone that are able to help increase students' understanding. Furthermore, students with mature and naive epistemological beliefs also consider that a good tutor is someone that have good attitude and always be kind to student.

According to students with a mature epistemological belief, tutor have to have accept students 'incomprehension when discussing, not degrading students' curiosity, and not being authoritarian.

interviewer: "How does he scold you?" What did he say?
Student: "ummm .... i can not .. hahaha .. i can not imitate him, but the point is .... he said ..... what the hell you actually learned... Why is your understanding just like this .. Did you really learn? ..... " (mature student,MA1)

Student: "..... Sometimes there are tutors that ..... uummmm .... too .... eemmm very demands us to follow .. .. folloow the flow of discussion that has been determined ... so he is too..... " (mature student,MA1)
Questioner: "too authoritarian?"
Student: "Yes .. authoritarian" (mature student,MA1)

Meanwhile, according to students with a naive epistemological belief, good tutors are those who do not like to scold students, and willingly provide opportunities for students to speak.

"..... then, for example if I say ... like I'm talking something .... then if I'm done talking, I hope not to be scolded by tutor .... So I'm not afraid to explain something even if it is wrong ... Then ... if we do not understand about something .... the tutor should explain it to us. "..... (naïve student,NP1)

Then, the two student groups also considered that the good tutors were someone who were able to manage the discussions properly; ie. trigger student activism, trigger student thinking, control the direction and depth of discussion, intervene well, provide confirmation, and provide solutions.

It appears that the two groups of students have understood the task of the PBL tutor. However, students with naive epistemological belief still want that tutor willing to provide assistance or guidance to students learning. They want the tutor still helping them in understanding learning content.

Student: "Uummm ..... We are looking for discussion material ... it should be ... but if we do not look for material to be discussed then we should ask the tutor. Or better the tutor who explained it to us. " (naïve student,NP1)
Interviewer: "You want your tutor explain that to the students?"
Student: "yes"(naïve student,NP1)

Student: "..... if students explain about a material but then it is still not complete, tutor should immediately tell students if there is still some deficiencies and then explaining the deficient. So that students can know the deficient, and can learn again .... to be more complete " (naïve student,NP2)
Interviewer : "Explain the deficient? ... What he should explain?"
Students : "The material.." (naïve student,NP1)
Interviewer : "Not your understanding about the material?"
Students : "No" (naïve student,NP1)

The results of this interview show that students with naive epistemological beliefs want the tutor to still help them in understanding learning content.

Furthermore, from the results of the analysis it is also known that there was some differences between students with mature epistemological belief and students with naive epistemological belief. Students with mature epistemological belief considered that good tutor is someone that capable to perform critical analysis, while students with naive epistemological belief did not considered about that.

"Just like yesterday.....there was a student who mentioned something about apneu. I think the tutor should have been more critical at that time. The tutor should ask the student the differences between apneu and asphyxia.... Yes ... the tutor must ask that question .. "(mature student,MA2)

"She is very passive ..... If we are not commented we will think the theory that we explain is correct. Or if the theory that we explain is wrong, we will not know.. And even if what we explain is true, she should also give a question to test wether we really understand about that theory or not .... " (mature student,MA2)

Meanwhile, students with naive epistemological belief considered that good tutors is someone who had skills to make the discussion to be more structured.

"I hope, the tutor makes the sequence of discussion ..... Because this is more comfortable for us if the discussion is in order. I once got a tutor who asked us to discuss in order. Physiology first discussed, ... until the last we discuss about the drug. I think like that's better ...." (naïve student, NA2)

The Students with naive epistemological belief also did not like tutors who liked to connect various data or problems in tutorial discussions.

Student : "For example.... we are discussing pre eclampsia, then he said do you think there is something missing about eclampsia? Or... are you sure that you have complete explanation about eclampsia? .....Then if there is information like this how do you think?.... Then after that the other students joined in to add to the explanation about eclampsia.....until finally explanation of eclampsia were complete. "
(naïve student,NP4)
Interviewer: "What about your tutor?"
Student: "My tutor was not like that. The discussion was jumping up and down. This One is associated with that one..... Confusing... So I think the discussions are not even complete..."
(naïve student,NP4)

Students with mature epistemological beliefs have a perception that a good tutor is someone who can do critical analysis. They were very appreciative when the tutor questioned the information revealed by

students during the discussion. This student perception is parallel with the process expected in the learning system that uses PBL.

Table 2: The Effects of Epistemological Belief Maturity Level On Student Perception About PBL Tutor Roles

Students with mature Epistemological Belief	Students with naive Epistemological Belief
A good PBL tutor is someone that: 1. Capable to increase students' understanding 2. Always be kind to students 3. Capable to manage discussions, such as: • trigger student activeness • trigger student thinking • control the direction and depth of discussion • conduct well intervention • provide confirmation • provide solutions • conduct critical analysis of student opinions	A good PBL tutor is someone that : 1. Capable to increase students' understanding 2. Always be kind to students 3. Capable to manage discussions, such as: • trigger student activeness • trigger student thinking • control the direction and depth of discussion • conduct well intervention • provide confirmation • provide solutions • capable to make discussion more structured 4. Capable to provide guidance (in learning content)

DISCUSSION

In teacher-centered classrooms, control is very importance and "authority is transmitted hierarchically" [25, 26], the teacher exerts control over the students. Whereas in PBL system,which is a student-centered approach, the duty of the teacher is to increase students' intrinsic motivation, create activity plans for students, and providing opportunities for students to learn how to make their own choice [27,28,29]. According to Stronge[30] mutual respect is an indispensable element in instructional recipes. A dismissed teacher easily becomes frustrated and tends to give up; as well as students who are not respected or appreciated will usually withdraw from the learning process. The learner should feel relaxed, respected, trusted, accepted, and secure when his teacher is around. Therefore, teachers should always not be intimidating, friendly, respectful, tolerant, and accommodate learners to express their opinions.

In managing the tutorial group, the Tutor acts as someone who facilitates, monitors and provides stimulus so that the discussion process takes place properly. Tutors do not provide information, but encourage students to find information for themselves. Appropriate feedback and assistance from tutors helps students in this active learning process. The tutor should make sure all students are involved. Facilitating group discussion is one of the main tasks of problem-based learning tutors. The main points of group facilitation are processes, and not learning content. Facilitation is not about the detailed content or what the group does. The purpose of facilitation in PBL learning is to make the process easier and more comfortable than answering questions or giving lectures. Facilitators work to keep groups focused on their tasks and guide them to achieve their goals [31,32].

The results of this interview show that students with naive epistemological beliefs want the tutor to still help them in understanding learning content. When connected with Gibbons' SDL Spectrum and Student's Readiness [33], it appears that this group of students naive epistemological belief has the same characteristics as students who are still in the lowest level of self directed learning (incidental self

directed learning), where students have low characteristics ownership and depend on teachers to direct learning.

One of the tutor's role in PBL is facilitating the students' development of thinking or reasoning skills[34,35]. Mayo et al[36] explains that the tutor also acts as a metacognitive guide during PBL discussion. As metacognitive guides, PBL tutors help promote students' development of clinical reasoning skills through actively modeling this process for the students. While not giving the answers, the tutors model what questions an expert physician would ask in a clinical setting and guide students to formulate questions as expert physicians would. So in carrying out this role, then the tutor is expected to encouraged students to critically evaluate the information gathered, questioned and probed the students' clinical reasoning processes and, most importantly, allowed students to control the learning process. Questioning the students' clinical reasoning processes serves two functions: verifying the appropriateness of the students' reasoning and modeling expert physician's reasoning processes[37,38], allowing self-control in the learning process is essential for students to develop self-directedness in their own learning.

Meanwhile, students with naive epistemological beliefs still have some imprecise views on the role of tutors. Students with naive epistemological belief considered good tutors were someone who could make sequential discussions to be structured. From the results of the interview it was also known that students with naive epistemological belief did not like tutors who liked to connect various data or problems in tutorial discussions. This was probably because of students with epistemological beliefs had naïve problem-solving strategies in inappropriate tutorial discussions. Students with naïve epistemological belief liked to discuss problems in the discussion by using certain algorithms[39]. Algorithms were a sequence of steps that were precise, logical, detailed, and limited to solve a systematically arranged problem. The description of student problem solving with naïve epistemological belief above was similar with problem solving for well-structured problem.

Moreover, if it is related to the difference in information assimilation by the novice and the expert[40] it will appear that students with epistemological belief naive resemble the novice level. It says that novice has knowledge base which is limited and fragmented, focuses on superficial aspects of information, and needs the tutor to explain the connection between data. While the experts are quick to identify the hidden relationship and the misinformation of problems with which they are confronted. So, the students with naive epistemological belief could not see the importance of making a connection between existing data or information, and also need help to be able to make connections between existing data or information. Furthermore, the way they solve problems and their perspective on knowledge that is still fragmented will impact on their views on the role of tutors.

CONCLUSION

From the interviews, it could be seen that there were differences on students' perception to tutors' role between the two groups. This affects the type of tutor students from each group want. The way students with mature epistemological belief perceive tutors' role is parallel with the correct concept of PBL, meanwhile students with naive epistemological beliefs still perceive tutors' role differently from the correct PBL concept. Students with naive epistemological beliefs are similar with students in the lowest level of self-directed learning (incidental self directed learning) in the way that they depend on teachers to direct learning. Students with naive epistemological belief are also similar with novice group in information assimilation. They could not see the importance of connecting existing data, and they need help to do it. It is also shown that students with naive epistemological belief did not like tutors who liked to connect various data or problems in tutorial discussions. This was probably because of students with naive epistemological beliefs had problem-solving strategies that was inappropriate to PBL tutorial discussions. Students with naïve epistemological belief liked to discuss problems in a

similar way to problem solving for well-structured problem. The results have consequences for tutor. Tutors should pay attention to student characteristics, especially their epistemological belief maturity level. Tutors should adjust their mentoring stages to students during PBL tutorial discussions, in order to avoid overestimating or underestimating students 'ability and students' level of independence in learning.

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CONFLICT OF INTEREST

There are no conflicts of interest to disclose.

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