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CORRELATION BETWEEN EFL STUDENTS' ACADEMIC ACHIEVEMENT AND EPISTEMIC BELIEFS IN RELATION TO EDUCATIONAL PSYCHOLOGY COURSE

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Article Info	Abstract
	A competent teacher is formed by courses studied and how they conceptualize knowledge. Educational psychology course and the epistemic beliefs of of prospective teachers play a role in it. With an explanatory sequential mixed method design, this study aims to analyze the interplay of English education students' academic achievement and epistemic beliefs, in relation to educational psychology course. This study used quantitative survey to collect GPA(Grade Average Points), 4-point scale instrument of epistemic beliefs scale and perception of educational psychology questionnaire. Involving 102 EFL students at Brawijaya University through homogenous sampling, descriptive quantitative and correlation coefficient analysis was conducted in the first stage. The analysis reveal their epistemic was moderate and their perception was high, and only between their epistemic belief and their perception was found a strong correlation, indicating the higher their epistemic beliefs, the more positive their perception are. Through confirming or disconfirming sampling, the intended representative from the first stage participated in qualitative phase for semi-structured interview, resulting in justification of their positive perception and confirmation of the interconnection with epistemic beliefs. Findings imply there is a need to comprise aspects of high epistemic beliefs in order to have a more positive educational psychology course. The high interest in unlisted content in the current module implies the need for material relevance of the course. The implication is for EFL teacher education to reconsider the content in educational psychology with students' epistemic beliefs in order to equip English education students to become effective teachers.

INTRODUCTION

Educational psychology for teacher education has been perceived as important subject as to prepare them to be effective teachers(Poulou, 2005; Woolfolk Hoy, 2000), that is consistently studied by prospective English teachers and is widely applied in higher educational institutions. As one of the fundamental courses to take for English education students, it was taught in many ways with many types of contents covering theories of learners' psychological development(Schwartz et al., 2023). The role of educational psychology here seems to focus on preparing prospective teachers to apply those theories, which unreasonable to expect that students will immediately use their understanding and abstract concepts to solve real-world problems if we do not give them the opportunities and resources to do so in the classroom(Shuell, 1996). Moreover, the highlight of shortcomings in their teaching in terms of, for example, an overly theoretical curriculum that emphasized theoretical views over fundamental concepts would encourage students to contend with theoretical challenges that

might appear more applicable to scholars instead of prospective educators(Alvarez et al., 2018). This currently has become discussions point questioning the relevance of the content learned in educational psychology to what is needed to prepare the English education students to become a teacher.

With the aim of educational psychology, this course should be also able to develop their intention to teach, which is also perceived important. One of the considerations is that it was found that more intentional instructors will be better at adapting their teaching practices to new contexts and sustaining the improvements they want to see(Michael Putman et al., 2009). Acknowledging the critical role of intentional teaching, it is reasonable to aim as this competence can develop during the process of them becoming a teacher. We might look at the competence of English education students through their academic achievement. However, we should not limit into it because the results of studying course like Educational Psychology course for English education students teaching has not yet been able to see in the current time yet we still can focus on aspects that influence the way they will teach, such as individual differences(Geerlings et al., 2018; Lu'mu et al., 2023;.

Studies indicate that individual differences is one of the aspects that have influence in prospective teachers' teaching (Geerlings et al., 2018; Lu'mu et al., 2023; Yadollahi, 2015). Some types of it was revealed by some research such as age(Sackett et al., 2017), teaching experience(Murphey & Falout, 2012), and gender(Chelladurai et al., 1999) and those aspects, for example, was found to affect the way EFL teachers teach by utilizing technology in the language classroom(Yadollahi, 2015). Another examples are knowledge and skills(Sackett et al., 2017) which can be in the form of the ability in processing information and achieve tasks(Elif et al., 2016) or personality(Biedroń & Pawlak, 2016 ;Woods & Hampson, 2010)and it can change over time by some factors(Helmreich et al., 1986). For English education students, factors that might influence their individual differences include the way they are taught(Elif et al., 2016), the way they learn(Zhang et al., 2023) and their epistemic belief(Kardash & Howell, 2000; Rosenberg et al., 2006). With this in mind, we could argue that educational psychology course might have consideration with the epistemic belief of English education students.

Although there is discussion of the importance of aspects that shape prospective teachers' individual differences, and there is literature in their epistemic beliefs, so far no attention has been paid to English education students' epistemic beliefs in relation to educational psychology course whereas epistemic belief itself are related to educational psychology((Puspitasari et al., 2019). Thus, this study aims to examine the interplay of their academic achievement, epistemic beliefs and educational psychology to understand their perception regarding the course. In addition, this investigation seeks to uncover how their epistemic beliefs are connected to their view of this course including how they perceive contents of this course. Given the gaps in understanding the complex association between epistemic beliefs, perceptions of educational psychology courses, and academic achievement among English education students, there is a clear need for mixed methods research approaches that combine quantitative and qualitative analyzes to provide comprehensive explanations refinement of the statistical results. To address this objective, the following research questions were proposed:

1) What is the relationship between English education students' academic achievement, epistemic beliefs, and their perception of educational psychology course?
2) How do English Education students perceive the educational psychology course?

Literature Review
Correlation between EFL students' achievement and epistemic belief

There are several terms recognized in several related sources in epistemic beliefs, such as epistemic cognition, epistemological beliefs, epistemological resources, individual

epistemologies, epistemological reflection and reflective judgment (Derakhshan et al., 2021). Epistemic beliefs is often referred as someone's beliefs about the of knowledge, the criteria for the learning, and the comprehension of knowledge(Aditomo, 2018). In other words, epistemic beliefs may be defined as beliefs of individuals about the essence of learning and knowledge.

Existing literature studies the interplay domain of EFL students' achievement and EFL from various aspects including their achievements in specific English language skills to their academic performance. One study examined the correlation between EFL students' reading achievement, epistemic beliefs and their critical thinking(Amatullah et al., 2021). It was found to have a strong correlation from English education students. Another study examining the relationship between speaking achievement and EFL students epistemic beliefs found that there is a positive medium correlation between these two variables (Emaliana & Rohmah, 2020). This study highlights the prediction that if EFL students' epistemic beliefs is high, their speaking performance will also increase. Both of these studies use domain-specific measurement of epistemic beliefs which is for English education students, humanities field. These studies highlight the association of EFL achievement in specific skills with epistemic beliefs.

Another study examined how English language achievements is impacted by English learning beliefs(ELBs) of first year students in Ethiopia through academic emotions (AEs) along with gender and domain differences(Mulualem et al.2022). The findings indicate that English learning beliefs affect both directly and indirectly their English achievement. From these studies it appears that the existing literature shows a correlation between students' achievement and their epistemic beliefs.

Relation between educational psychology course and teacher education

The relation between teacher education and educational psychology has changed over time, with the theory moving from the integration of educational psychology for teaching practice to the realm of studying issues in the classroom and subject matter in learning and teaching(Woolfolk Hoy, 2000). One research proposing the interconnection between teacher education and educational psychology reveal that educational psychology has a relationship with increasing understanding and achievement of formal instruction in the classroom by presenting rationale and information that is useful in guiding learning decisions and teaching practices(Poulou, 2005). Another study through qualitative analysis highlighted their findings that the content students learn and the educational psychology learning design students take have an important role in changing the motivation of prospective EFL teachers towards teaching which is based on the results that some of their motivation increased and others was found little change (Lee & Yuan, 2014). It is in line with previous research highlighting their finding in the need to update the teaching of educational psychology for prospective teachers to help students connect the relationship between conceptual framework and actual implementation in their future rather than focusing on teaching concepts(Alvarez et al., 2018).

In addition, teacher need to understand the atmosphere and behaviour of their students which is a complex process because human behaviour is not a constant aspect so when this behaviour and circumstances change, it is the teacher who must attempt this situation with the right approach(Karim, 2022). From this perspective, it shows the significance of assisting teachers in understanding students so that teachers will have the regulatory ability to organize the class to be more positive rather than fill it with punishment for behaviour that is different from what is expected. Regarding this literature, the association of educational psychology with teacher education should develop appropriate adaptations so that can foster expectations of good achievements in their future teaching

The Interplay between EFL students' epistemic beliefs and perception towards a course

The term epistemic beliefs, derived from the word epistemology, is mostly associated with educational psychology(Puspitasari et al., 2019). Educational psychology is a study that

investigates the fundamental theories of learning and teaching, with a focus on teacher-student interactions and psychological phenomena in the process (Duan, 2023). Many studies have explored the interplay between students' epistemic beliefs and the viewpoint of the course they learn which may include the way they are taught and their conception of what they learn.

For example, a study found that the dimensions of ability to learn and source of knowledge from epistemic beliefs were associated with instructional preferences of prospective EFL teachers(Sarıçoban & Kırmızı, 2021). They integrate 3 types of questionnaires that are intended to measure the relationship between epistemic beliefs, instructional preferences, and teacher engagement. Their study found that participants unsure about, for example, that the ability to learn is innate and they also undecided that individuals can do many things to become smarter. With regard to how course teaching is carried out, was perceived by students, the quantitative data shows that constructive teaching methods correlate with dimensions of teacher engagement.

Another study explored the correlation of EFL teachers' epistemological beliefs and learning and teaching concepts and found that the results were positive with a significant correlation (Mardiha et al., 2020). This study conducted on senior high school teachers in Turkey, revealed that their perception of the source of knowledge was the strongest and their belief in the stability of knowledge was the weakest. It can be seen that the role of the educational psychology course forms teacher preparation to improve the epistemic beliefs of pre-service English teachers.

While these studies have examined the association between students' achievements and epistemic beliefs and perception toward teacher courses, there has been no previous research in the field of educational psychology course for English education students in relation to their academic achievement and epistemic beliefs. Finding the relevancy of contents discussed in the studies, regarding the association between variables and how epistemic beliefs may provide a more positive environment that can enhance students' teaching success through educational psychology course, this study is intended to contribute to the enhancement of prospective English teachers' intention to teach in their future career.

RESEARCH METHOD
Research Design
This study employs a mixed methods explanatory sequential research design, meaning that both quantitative and qualitative methodologies are used in our investigation. In order to explain the first phase of the research, the primary phase will gather quantitative data, followed by the second phase which will collect qualitative data(Creswell & Clark, 2018). This method is justified by the fact that quantitative data, along with further analysis, provides a comprehensive understanding of the research issue.

Population and Sample
Participants were selected in two constructive phases. Through homogenous sampling, this research initially involved 102 participants (79 female, 23 male) for the quantitative stage who were invited to participate based on certain criteria. All of them are English education students at Brawijaya University, Indonesia and had previously been or were currently enrolled in an educational psychology course. In addition, all participants are Indonesian and learners of English as a Foreign Language (EFL). With this sampling strategy, the selected group can better provide the intended information in detail to expand understanding in depth(Creswell, 2013).

Participants in the second phase are selected from those who had participated in the first stage, and had demonstrated their willingness and ability to participate in this research. To better understand the initial results, confirming and disconfirming sampling was chosen to verify or contradict the findings(Creswell, 2013). This selection was deliberate, focusing on participants whose responses were particularly representative from the broader data. Therefore, it involved

2 participants from sophisticated epistemic beliefs as the initial findings lead to this concern. While contacting the sample for the interview, one sample expressed their reluctance. Therefore, another sample was invited. Considering gender bias, both male and female students were included. Considering gender bias, both female and male participant were included to enrich the qualitative results.

Instruments

The data collection began with pre-testing the questionnaire for reliability and validity examination to determind if the questions in the survey is clear to be resolved(Creswell, 2013). In addition to collecting students' GPA, this study utilized the epistemic beliefs scale by Emaliana et al.(2018) consisting of 4 dimensions that can be seen at Appendix 1. This study also adapted the questionnaire by Liu(2023)for perception toward educational psychology which includes 4 dimensions as attached in Appendix 2**.** The pre-test involved to 20 participants. While the survey passed the reliability test, a number of statements were eliminated as they were found to fail the validity test. The final number of the questionnaire consists of 14 questions in epistemic beliefs scale and 33 statements covering perception of educational psychology addressing all sub dimensions.

The questionnaires were distributedthrough online form which also include section for participants to determine potential contents to include in the educational psychology course. The option includes the 7 contents obtained from the course module shared by one of the course instructors and 9 unlisted content that were comprised from previous studies (Dougherty et al., 2020; Frauman, 2004; Geerlings et al., 2018; Reicher, 2010 Krahenbuhl, 2016; Martin, 2023; Maxwell & Narvaez, 2013; Orabah et al., 2022; Pizzuto, 2020; Rissanen et al., 2018; Schussler, 2020; Spina, 2019). The instruction given was to select 7 contents that they thought should be included in the educational psychology course. The form also included a section for students to openly share comments regarding the course.

As for the qualitative data, it was gathered by interviewing representatives which was guided using the instrument of educational psychology course perception's dimensions which were modified into open questions. All participants were asked about their concern before participating in the study. The interview is audio-recorded and held through online meeting and face-to-face interview, adjusted to the comfort and wishes of the participant.

Data Analysis

Quantitative descriptive analysis and correlation were carried out for the quantitative data in this study. The mean score of the data was determined to organize a quantitative descriptive analysis. The interpretation is then established using the 4-scale data interpretation relying on Talib(1996), see table 1**.** Then, this study integrated Pearson correlation coefficient using SPSS to examine the relationship of English education students' achievements and their perception toward educational psychology, students' achievement and their epistemic beliefs, and students' epistemic beliefs and perception of educational psychology course. The interpretation of the results rely on Sarwono(2006)**,** see table 2.

Table 1
Mean score interpretation of 4-points scale

Mean score	Interpretation
3.10-4.00	High degree
2.10-3.00	Moderate
1.00-2.00	Low degree

(Source: *Talib, 1996*)

Table 2
Interpretation of correlation coefficient result

Correlation coefficient result	Interpretation
>0.90	Almost perfect
0.70-0.89	
0.50-0.69	Very strong correlation
0.30-0.59	Strong correlation
0.10-0.29	Medium correlation
0.01-0.09	Weak correlation
0	No correlation

(Source: *Sarwono, 2006*)

Following the initial results in the quantitative data, this study followed Creswell & Clark's(2018) recommended procedure to analyze the qualitative data starting by transcribing audio recordings, checking for accuracy, then reading through the data and adding memos which were then developed into several initial codes. Atlas.ti 24 was integrated for qualitative data management and analysis. The objective of this design is to provide in-depth exploration of specific variable outcomes, using qualitative insights to offer further explanation(Creswell & Clark, 2018). Consequently, qualitative findings can offer comprehensive understandings that complement the quantitative database.
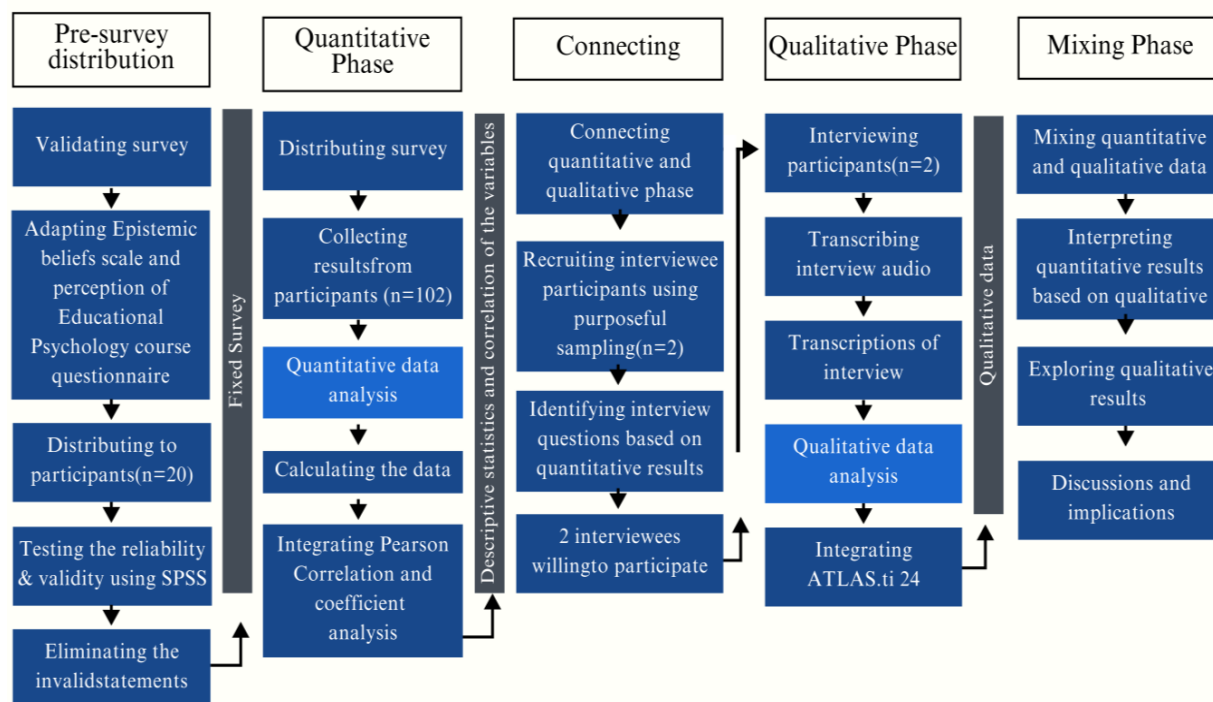

Figure 1. Visual diagram of the research process

RESEARCH FINDINGS AND DISCUSSION
Research Findings
Descriptive Quantitative Results

The current study integrated quantitative descriptive analysis which was carried out in the form of reviewing and interpreting data in terms of means and percentages of variables.

Table 3
Mean score of Epistemic Beliefs' Dimension

No	Dimension	Total Mean	Rating

No.	Dimension	Mean	Interpretation
1.	Certain Knowledge	2.40	Moderate
2.	Fix Ability	3.05	Moderate
3.	Omniscient Authority	2.58	Moderate
4.	Simple Knowledge	2.85	Moderate
	Total	**2.72**	**Moderate**

Starting from the results of the epistemic belief survey on the certain knowledge dimension in table 1, this is rated moderate with a total mean of 2.40. From the data, it was found that the lowest mean value was 2.10 in the aspect of static definition of learning English to use in the future. The second indicator is students' belief that sometimes there is no right or wrong answer to a problem in learning English with a mean value of 2.70. In other words, all indicators in this dimension are interpreted from the overall rating as moderate. This has an impact on the total of this dimension being moderate.

English education students' fix ability is measured by formulating 5 statements. Fix ability dimension in table 3 with a total mean of 3.05 interpreted as moderate. Furthermore, the highest value is in the statement about the course of a study skills would most likely beneficial in English learning with a total mean score of 3.44 indicating that most students believe that a course that focuses on skills in English will play a big role in their learning. In contrast, the lowest value is in 2 statements with a value of 2.70 where the interpretation is moderate. Apart from that, other indicators have high interpreted mean values. In short, this indicates that most of participants doubted the role of hard work in learning but rather they see learning success as something offhand.

Furthermore, the omniscient authority dimension is also moderate with a total mean of 2.58. Correspondingly, the statement with the highest value is the statement mentioning when their instructors presented a very clear lectures with many remarkable examples on learning English, students generally have to practice independently, with a value of 3.32. The lowest mean value is 2.13 belong to the statement about teachers is not supposed to teach everything that one needs to learn about English interpreting its rating is moderate. It implies that students believe that the role of the instructor in learning English is important yet needs foster by efforts to learn independently.

In the simple knowledge dimension, a total mean score of 2.85 was found, interpreted as moderate. The 2 indicators measured have a moderate rating interpretation. The first indicator is related to the statement mentioning that most English words do not have one clear meaning with a total mean of 2.94. Furthermore, statements about to perform well on English assessments, it is not always necessary to learn the exact definition has a value of 2.75. This indicates that students moderately believe that there are diverse ways of asserting the right standard of knowledge and we need to view knowledge from diverse sources as well.

Table 4

Mean score of perception of educational psychology course dimensions

No	Dimension	Mean score	Interpretation
1.	Level of motivation for Educational Psychology course	3.07	Moderate
2.	Level of efficacy in the Educational Psychology course	3.19	High
3.	Perceptions of the Educational Psychology course	3.18	High
4.	Perception of the most appropriate person for teaching this Educational Psychology course (Others)	3.12	High
5.	Problems in seeking information(Others)	2.99	Moderate
	Total	**3.11**	**High**

The next finding is on perceptions of educational psychology course. Based on data from the survey, the results obtained the total mean level of motivation for the educational

psychology course was 3.07, interpreting that students were moderately motivated to study educational psychology. More deeply, the highest score is 3.67 interpreted as high rating from the statement that they were motivated because they perceive the use of this course for their future positively. In contrast, aspects they took the educational psychology course because of senior's recommendation had the lowest value with a mean of 1.98 interpreted as low. It can be concluded that their extrinsic motivation seems to not have more role than students' intrinsic motivation in studying this course.

In the results regarding the level of student self-efficacy in this course, it was found that they had high self-efficacy. It was revealed from the mean score was 3.19 interpreted as high. Furthermore, the statement in the form of a positive belief about using educational psychology competencies effectively in the future occupied the highest mean value scoring 3.41. On the other hand, they moderately believe that for those who take this course, they are more competent compared to those who do not with score 2.92. This indicates that their perceptions are aligned with epistemic belief indicators, admitting that smart students study more compare with the average ones.

The next is students' perceptions of educational psychology course. The results found that their perception is positive which shows a total mean of 3.18, interpreted as high. The highest score is in the statement about this course role in supporting their future learning with a total mean of 3.54 categorized as high rating. As for the lowest mean score is 2.33 interpreted as moderate which is the statement regarding the ability to practice their teaching well outside studying the educational psychology. In other words, it indicates that they perceive the educational psychology course to be significant for their learning and the future outcome of this course.

In the dimension that measures students' perceptions about the most appropriate person for teaching this educational psychology course, 2 choices are presented and the total mean is found to be 3.12, which means the rating is high. We found that the first statement having 2.87 mean score indicating students moderately perceive that their academic supervisor is a suitable person to teach the educational psychology course. Apart from that, they perceive academic psychologist is more appropriate as the data reveal a high rating with a mean score of 3.12. From these findings, it seems that that students wish an expert to teach this course more than instructor they have known before.

Moving on to the next dimension related to problems in seeking information. The results obtained are a total mean of 2.99 indicating they are moderately seeking help from others in resolving issues they have. Interestingly, the only option that received a high rating with a mean 3.53 was the option to explore in numerous databases. The remaining options are rated as moderate. It implies that students are more independent in facing problems in finding solutions rather than relying on other people

Correlational Results

Findings for the correlation of English education students' epistemic beliefs, their academic achievement as well as their perceptions of educational psychology courses, was examined using Pearson product correlation coefficient. First, a two-tailed test of statistical significance was integrated to calculate students' GPA (Grade Point average) and epistemic beliefs. The results of correlation coefficient between was .105 with p= .292 > 0.01(see table 5) indicating there is no relationship between GPA and epistemic beliefs.

Table 5
Pearson correlation between GPA and epistemic beliefs

Correlation

		GPA	EB
GPA	Pearson Correlation	1	.105

	Sig. (2-tailed)		.292
	N	102	102
EB	Pearson Correlation	.105	1
	Sig. (2-tailed)	.292	
	N	102	102

Similarly, for result between GPA and perception of educational psychology course, it was found that that there is no relationship between the two as the correlation outcome was .070 with p= 482< 0.01. It is presented in table 6**.** From the results, it implies that between GPA and epistemic belief as well as between GPA and students perception of educational psychology course is not associated.

Table 6
Pearson correlation between GPA and perception of educational psychology course

Correlation			
		GPA	Perception
GPA	Pearson Correlation	1	.070
	Sig. (2-tailed)		.482
	N	102	102
Perception	Pearson Correlation	.070	1
	Sig. (2-tailed)	.482	
	N	102	102

On the other hand, correlation coefficient analysis between the epistemic beliefs and perception of educational psychology results to be .309 with p= .002 < 0.01 (see table 7) indicating they are correlated as the result was affirmed to be significant at the 0.01 level. This value(r= .309) interpreted as a positive strong correlation based on Sarwono(2006). In other words, it implies that the higher students' epistemic beliefs, the more positive their perception will become. This finding then becomes the consideration for the qualitative exploration for the following phase in this mixed method study.

Table 7
Pearson correlation between GPA and perception of educational psychology course

Correlation			
		Perception	EB
Perception	Pearson Correlation	1	.309**
	Sig. (2-tailed)		.002
	N	102	102
EB	Pearson Correlation	.309**	1
	Sig. (2-tailed)	.002	
	N	102	102

Qualitative Findings

This section presents interview results with 2 participants, Rio and Ayu (pseudonym), who were purposively selected and expressed their concern to participate. One student is female and in her second year and the other is male who is in his first year. They were selected based on their high epistemic beliefs' consideration. It aimed at confirming or disconfirming if they also show a perception of educational psychology course positively in accordance with epistemic belief.

Motivation

From their viewpoints, both students stated that they were motivated to study this subject because they were aware of their role as prospective English teachers where this course would be useful for them to learn theories of students' behaviour which they would later apply in the practice of their future careers. In addition, both of them also perceived that the role of lecturers in their motivation for this course is crucial. They explained that their lecturers' way of teaching foster their motivation. Rio mentioned that the lecturer encouraged students to ask other students who studied psychology, compare with what they learned with what they studied, and analyze the behaviour of students majoring in psychology. This confirmed their perception related to the knowledge authority indicator of epistemic beliefs where students still have a role even though the lecturer has provided very clear explanations during learning.

Ayu remarked her experience learning with her lecturer:

"So it was like when I was in class, I really explored it[educational psychology course] with the lecturer, so it seemed like I got a lot of feedback, like oh, it turns out it[dealing with students] can be like this, it can be like this. Then I consulted about the problems I faced when teaching children. How about try [to handle] it like this. It turns out there is something like that [strategy for dealing with it]"

Moreover, Ayu was motivated to learn this course because she was interested in the academic field and saw that this course was related. This is evidence that the connection between one field of sciences and other knowledge is a factor that supports students' motivation in learning. Their motivation for the EP course seemed positive and in line with the indicator that learning can be done individually by everyone as they have the freedom to explore knowledge.

Self-efficacy

Both participants expressed they feel more competent in educational psychology competence compared to their friends who have not studied this course. From this perspective, we could see it as confirmation in regard to the indicators of epistemic beliefs that learning is ability that can improve over time. Rio elucidated his view:

".....for those who don't really understand this, especially those who don't know how to teach based on learning theories, they will just guess what to apply. While those of us who study it, mainly study the theory, how to apply it, I think I definitely understand much more than they do. Maybe I can examine someone if the way to teach them is suitable using learning theory A learning theory B"

In the following quote, Ayu shared regarding her teaching volunteer:

".....and if for example I compare it with those who haven't studied educational psychology, maybe they just apply their experience or maybe just things they know[to teach students]. But it's not necessarily 100% successful or not even worked out."

Here, Rio expressed his belief that individuals who learn a competency are definitely more capable in its aspect, which he expresses here in the field of educational psychology abilities. From Ayu's viewpoint, she conveyed that learning EP is not entirely determined by classroom teaching, but rather that knowledge is simple and can be done through logical experience. It leads the affirmation of her positive perception of educational psychology as a high epistemic beliefs' representative.

Perceptions of educational psychology course

In terms of studying educational psychology, both of them similarly stated that it made them realize the lifelong learning existence. Ayu expressed her view that when she applied the learning theories she learned from both lecturers and books, she realized that anything she

learned is useful and she could make use of it forever. Similarly, Rio expressed that educational psychology learning should not only limit for a classroom, but also applicable for society so individuals need to keep learning because many things will definitely change. He concluded that with this change, it inevitably requires us to learn throughout the life. This indicates a positive confirmation that the definition of one understanding may not be still relevant for the future.

However, in looking at the role of educational psychology competence, the two participants had different views. Rio considered studying this course for students beyond educational realm is not a must but rather is optional. He explained in the following:

"......maybe if they have the intention, maybe they want to become teachers, they want to take a teacher professional education program or something like that, maybe they can study it first. If they don't want to be a formal teacher but they want to learn, that's fine. If they do not learn it, that's fine too because those who are more focused on something like math, or chemistry, engineering, and physics and so on, I think maybe they just need to know it without learn it deeper."

On the other hand, Ayu viewed that all students from any field of study should take this course because it is related to how to interact with humans. In her view, Ayu believed that because human are social creatures, this course can be implemented in a wider social sphere, for example in the community or neighbors not limited into teaching and students as it studies the character and behaviour of human.

Apart from that, the two participants also had different attitude about anxiety. Rio felt that his anxiety might still exist even though he has taken this course because he believes that in the future, there will be more challenges and changes causing him worry. Moreover, he said that his rebel character when he was at school complicate his anxiety because it might be reversed at him in the future. Ayu, on the other hand, said that because she already knew the importance of these competencies and had experience applying them when teaching as a volunteer at an elementary school; she felt her anxiety would decrease. Here it can be seen that Ayu's logic experience constructs a positive perception of learning.

The appropriate person to teach educational psychology course

In the discussion regarding appropriate person to teach, both of them shared the same thoughts that academic psychologists are suitable figures to teach educational psychology compared to their academic supervisor. Rio remarked the following:

"...if [taught by] academic psychologist, meaning that maybe much more expert when compared to academic supervisor who focus more on English. So, in my opinion, I would definitely understand better [if taught by a psychology academic]. Maybe from the way he explained it, it would certainly be different from what my academic supervisor said regarding psychology material.

Participants expressed that even though their supervisor hold an influential position or has a humble character with good teaching methods, they believed that person who are more expertise in the field might be better assist them in learning. This view reveals that the belief of knowledge is transmitted by an expert authority arises.

Strategy when facing problems

In exploring what they do when they encounter an issue looking for information, both of them said that they solve it independently using available resources such as internet. Ayu conveyed that if she can find the information she needs, she will do it herself and not burdening others. On the one hand, Rio shared his strategy when it comes to studying:

"First of all, I would definitely try searching on the internet first. Otherwise, maybe I'm stuck, like I have no hope, like I don't know what to do or what to do, [for example] looking at the year and so on, then I will definitely ask my seniors. This is a task that I have to do, how [to complete

it], how to find research, does it have to be from books or the internet or does it have to go to the library? So definitely ask your seniors first. If it is no longer possible from seniors, the next strategy is for me to ask the lecturer for further explanation regarding the assignment."

This information indicates that students with high epistemic beliefs perceived that information exploration should primarily be done independently first. However, this does not prevent them from involving other people in some situations.

Materials to include in educational psychology course

Interviews with participants also aimed to determine their considerations in selecting the 7 contents they chose, regardless of the final quantitative data results. From the results of the interview, it was found that their consideration was because they knew that these materials are useful for and the knowledge of those is important for their life. The 7 contents Rio chose consists of Jean Piaget's theory of cognitive development; Social, Moral, and Emotional Development; Student Diversity; Educational Psychology: A Foundation for Teaching; Motivating Students to Learn; Lev. Vygotsky 's theory of cognitive development; Behaviouristic learning theory. He conveyed that those contents should be enough to accommodate materials to learn for teaching such as to tolerate and understand student behaviour, to apply it in an appropriate way, and to examine what to do in a specific situation. Rio's consideration was elaborated as follows:

"...because I've only studied a few [materials], so I think those [options I selected] are what I think is suitable. Maybe if I study more [the options I did not select] in the future, the answer might change."

In further investigation, he considered the selection of some content that had not been studied in the current course based on the title. His indication of the possible change could happen at any time was if he had studied the other materials or when he had been exposed to those materials.

Meanwhile, the 7 contents Ayu selected are Jean Piaget's theory of cognitive development[Educational Psychology: A Foundation for Teaching; Lev. Vygotsky 's theory of cognitive development; Cognitive Theories of Learning; Skinner's learning conditions; Constructivist learning theory; Behaviouristic learning theory. Ayu's consideration was that she has proven the material she studied in the educational psychology course form a positive outcome in the implementation. She also stated that he would still choose these 7 contents even though the educational psychology content she studied was different from her choice because she had seen firsthand the success of the material she studied in when applied in real classroom situations. It implies that successful implementation makes participants believe that the current materials are reasonable for English education students.

In addition, participants expressed their interest if the course was taught based on epistemic beliefs. Participant reflected that in the epistemic beliefs, when filling out the scale previously, they acknowledge that lecturers should not teach all the material in a course to students. They stated that learning with lecturers should not limit learning to only specific ways. The role of the lecturer in a course should not take a full authority of the learning process. Lectures need to encourage students to explore on their own. This is in line with the omniscient authority on epistemic beliefs where lectures may not teach students everything they need to know about a subject.

Discussion

We did not evaluate the results of each approach independently because our research procedures allowed qualitative findings to clarify and contextualize quantitative findings. Consequently, we use the findings of two methodological techniques to explain an understanding. Finding of the correlation between students' perception towards educational psychology course and

epistemic beliefs has enlightened the subject matter of this study. With this interplay, we are able to infer that by enhancing students' epistemic belief, their perception will become more positive. The same way also apply by refining the educational psychology course, students' epistemic beliefs will elevate. With this discovery, then this study confirms students with epistemic beliefs positively view the educational psychology course. To improve both their epistemic beliefs and perception, as the components presented, there are several aspects related to this course to be evaluated Apart from that, the findings related to the content to include in this course also highlight a discussion.

The results reveal that there was no correlation between English education students' GPA and epistemic beliefs as well as GPA and perception towards educational psychology course, but what did exist was the correlation between epistemic beliefs and perception of educational psychology course. Concern regarding the inexistence of relationship between GPA and other variables was raised. Epistemic beliefs was found to have a direct influence on GPA(Lee & Chan, 2018). However, this study reveal a different results as it indicates that English education students' achievements when accumulated with their achievements of overall courses they have taken courses are not correlated with their epistemic beliefs. It is a distinct discovery with the previous research which examined EFL students' achievement in English skills with a positive correlation with epistemic beliefs (Amatullah et al., 2021; Emaliana & Rohmah, 2020). The possible cause could be the varying achievements of English education students in non-English courses affect their GPA. With this finding, it implies that when either epistemic beliefs or perceptions towards educational psychology courses increases or decrease, GPA does not tend to increase or decrease and vice versa.

Apart from that, students with high epistemic beliefs tend to be oriented towards the future, driving their motivation to increase in studying educational psychology. It arises from their awareness of their future career as teachers, in line with Hofer(2016), students with high epistemic beliefs tend to construct their intrinsic motivation in learning. Their extrinsic motivation on the other hand, positively is related to the teaching strategy of the instructor. Even though their learning experiences in the class is different, both of them they see this as a positive thing for them. Those who believe that learning should not be completely handled by scientific authorities confirm their awareness of their role as seekers of knowledge themselves. With their high motivation, they successfully manage to have self-cotrol in learning independently. Moreover, it indicates their belief about various ways of learning(Tolman, 1949). That is, they do not limit the source of educational psychology understanding from the instructor alone in order to gain knowledge. In this matter, educational psychology course need to reform so that it can lead students to become individuals who are future-oriented and allow flexibility in seeking knowledge so that their motivation in learning will also increase. That could start with stimulate opportunities for students to gain the existing knowledge that equips them to deal with complex matter of the present and future by exploring issues through perspectives from various fields and sources(Deng, 2022).

The same positive perception also appears regarding person with more expertise of educational psychology is suitable for teaching this course. That is a person with a professional competence in the field. They believe that the authoritative position or personality and teaching strategy of someone to be an instructor is other than their expertise. The more competent the instructors for the intended field the more appropriate they are to teach(Berliner, 2001). Thus, it is expected to make students a better learner with a more extensive understanding. While expertise here leads to someone who have the competence in the field of educational psychology that are valid as proven by their profession, this is an implication for instructor of the course to dig deeper into mastering competencies in this subject.

The positive perception of the educational psychology course that English education students have reflects its interconnection with their epistemic beliefs. Because their perceptions

are influenced by their epistemic beliefs, it is important to help enhancing their epistemic beliefs. Factors that influence a course to be more positive include providing positive and adequate formative and developmental feedback, building student confidence and self-esteem, providing an active learning environment that encourgase inclusivity(Munna & Kalam, 2021) all way to the instructor of the course themselves. By focusing on these factors, student perceptions for the course can become more positive illustrating the firm accomplishment of learning. Therefore, aspects that need to be highlighted is improving educational psychology course to achieve the set target. This can be done by making the learning process of this course assimilate with aspects of epistemic beliefs such orienting diverse ways to comprehend educational psychology competenciy in order to conduct learning process which is not handled fully by the instructor. By implementing these adjustments, it can lead to the more sophisticated students' epistemic beliefs so that this course will also be positive as the implementation of learning this course is based on the epistemic belief aspects.

Another point is their distinct perception of the role of the EP course for non-educational study students. There were different views on this matter where students with volunteer experience saw the role of educational psychology as equally important for everyone without exception. Meanwhile, other students feel that studying educational psychology for those beyond educational fields is not as necessary as for English education. This relates to the classification of a field of science according to its role for an individual(Hjorland, 1998). Additionally, this seems demonstrated that there are factors that influence their beliefs which ultimately influence how a person perceives science(Aikenhead, 1997; Fulmer, 2014; Lindner et al., 2004)which in this case, exposure to real situations in classroom teaching and its implementation in the surrounding environment forward positive perceptions. This highlights the need to orient students how the understanding they learn in this course works while in the real conditions in which this competency occurs.

It was also revealed that participants describe a high self-efficacy in educational psychology in which they view their competence as higher than those who have not studied it or studied it outside the classroom. This confirms that through the conception of learning as a mediator, epistemic belief has an indirect role in efficacy(Sadi & Dağyar, 2015). When individuals do not have the understanding and competence of educational psychology, then the possible consequence if disparity of treatment in dealing with specific situation in the classroom. Although students believe that learning educational psychology is able to do anywhere, there is another important role of taking this course academically. It highlights exposure to new understanding that will be obtained and the ways of learning integrated in this course.

When students learn or study their competency through this course, they may experience interacting in class lessons, for example through presenting their analysis, exchanging ideas with other students as well as understanding how to deal with specific situations in class from students or instructor's experience. As stated by De Felice et al.,(2023) that interactive learning functions as boosters for adult human learning because from the cognitive mechanism of studnets there are advantages such as eye-contact and gaze, sustained and joint attention, shared intentionality and attunement, stimulus saliency, social arousal, internal motivation, audience effects, common ground, as well as mutual predictions within inter-agent dynamics. This is an implication that the role of learning competencies in educational psychology through this course should be distinctive by offering componnets that potentially can only be obtained by individuals by taking this course.

Another matter is of self-efficacy in terms of their anxiety. For male participant who are aware of upcoming changes and challenges still have the same anxiety even though they have studied educational psychology. In distinct, female participant conveyed that her anxiety decreased because she is more prepared and experience successful implementation to the class

where she taught as a volunteer. This seems to be related to differences in gender and their experiences. Gender roles and experiences themselves are part of individual differences (Chelladurai et al., 1999; Murphey & Falout, 2012) which influence their epistemic beliefs. Therefore, this course should employ teaching strategy that allows students to explore related experience as what have been mentioned by Bartimote-Aufflick et al., (2015) that teaching strategy is an influential aspect for students' self-efficcay, thus applying teaching strategy that support their psychological needs in higher education become one of the ways such as sharing personal experience and proposing pair works. This way, they may learn from the real experience both from the instructor and students from different gender. With that, they will potentially reach higher self-efficacy in this course.

There is an understanding that students with sophisticated epistemic belief have their own strategies in dealing with problems they face in the process of learning educational psychology. Students will search for solutions for what they are dealing with independentl. Because one of the aspects of epistemic beliefs is source of knowledge, this allows understanding that information can be obtained in various ways. This has a positive impact on individual creativity indirectly because it involves intellectual decision making (Wan et al., 2021). The flexibility in solving problems requires free and structured analysis. If the first strategy fails to provide a solution to the problem being faced, then a further strategy must be formulated. Although it shows their flexibility in thinking and solving an issue, the role of the instructor as part of the source of knowledge for students is still needed. This is possible if there is an issue in which students are not able to solve with their own strategy then they might seek insight from the course instructor. This understanding implies that having high epistemic belief also positively affect students' creativity in solving problems they deal with.

Another discussion is the findings of content to include in this course according to English education students. While according to Deng(2022) that in knowing the educational essence of a content, it is necessary to evaluate the potential of what substance of education this content have and how to actualized it in which in responding to this, we need to refer to the students who will be educated. Many EFL students who participated in this study chose content that had not been covered in the educational psychology course. This is a concerning situation given that the selected contents are far higher than the current one. The contents were confirmed enough to equip prospective teachers so that it becomes the foundation and increases their competence for teaching.

In addition, qualitative analysis provides another understanding which shows that the materials contained in the module produce success when applied in their experience as teaching volunteers, causing participants to stick with what they have learned. These factors tend to show that materials that covered in this course should be laveraged more so it also incorporate crucial aspects of educational psychology for pre-English teacher in the future. While this perspective should not generalize the quantitative results as individuals have their own differences and decision consideration(Weinfurt, 2021), it could be refrained that the current materials are crucial to learn as a base for understanding the fundamentals of educational psychology while on the other hand there is other consideration. That is because educational psychology course is complex. There are other crucial materials that are perceived significant as well by students. It lead us to implication that the content of this course should be further expanded. That could be by considering the list of contents that this study found was selected by students to include.

As a matter of fact, this strong positive correlation between epistemic beliefs and perception confirms that the higher the students' epistemic beliefs, the more positive their perception of educational psychology course is. This finding is supported by the results of students' perception whose epistemic beliefs are high, sharing their positive views towards educational psychology. Apart from that, as stated by (Poulou, 2005) that teachers need not to be psychological theorists. Because English education students are expected to become

teachers, it would be unreasonable to only equip them with theories if not along with practical understanding as well. With this in mind, findings of the contents to include in educational psychology courses of this could be considered as it is encouraged that the materials of this course need to be laveraged so that it covers other crucial aspects of educational psychology for teaching prospective English teachers..

CONCLUSION

As a matter of fact, this strong positive correlation between epistemic beliefs and perception confirms that the higher the students' epistemic beliefs, the more positive their perception of educational psychology course is. This finding is supported by the results of students' perception whose epistemic beliefs are high, sharing their positive views towards educational psychology. Apart from that, as stated by (Poulou, 2005) that teachers need not to be psychological theorists. Because English education students are expected to become teachers, it would be unreasonable to only equip them with theories if not along with practical understanding as well. With this in mind, findings of the contents to include in educational psychology courses of this could be considered as it is encouraged that the materials of this course need to be laveraged so that it covers other crucial aspects of educational psychology for teaching prospective English teachers.

Sample in this study was English education students studying at one university in Indonesia with qualitative phase were from those of sophisticated epistemic beliefs only, limiting generalization of results. While this study was unable to recruit samples from representative universities, including those focusing on teacher education programs, future studies may conduct further research on larger population with more varied representative samples. Continued exploration is recommended to find out how students consider contents to study in educational psychology courses.

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Appendices
Appendix 1. Epistemic Belief Scale
    This scale was adapted from (Emaliana et al., 2018). This scale is intended to determine the views of English Language Education students on how to learn English and how to view English language learning.

No.	Statements
	Certain Knowledge
1	The definition of learning English in these days will not be still relevant to be used in the future
2	Sometimes there are no right answers to problems in learning English
	Fix Ability
3	A course in study skills would probably be valuable when learning English
4	The really smart students have to work hard to learn English well in school
5	Going over a difficult textbook chapter which is written in English usually will help you understand it.
6	English ability is not really just something you are born with
7	Students who are average in school will not remain average for the rest of their lives
	Omniscient Authority
8	Lecturers should not teach their students all there is to know about learning English
9	If lecturers gave really clear lectures with plenty good examples on learning English, I usually have to practice on my own
10	It is a waste of time to solve learning English problems that have no possibility of coming out with a clear-cut and unambiguous answer
	Simple Knowledge
11	Most English words do not have one clear meaning
12	Learning definitions word-for-word is not often necessary to do well on English tests

Appendix 2. Questionnaire on perception of educational psychology course
    This questionnaire is adapted from Liu(2023). The aim is to explore students' motivation and perceptions of educational psychology courses, as well as their self-efficacy in the subject.

No	Statements
	Level of Motivation for the educational psychology course
1.	Because I think this course would be very useful in the future.
2.	Because learning about academic work is very important to me.
3.	Because I am interested in the content of this course.
4.	Because the content of this course is necessary for my study and life.
5.	Because this class gets a high rating. I have a strong purpose to choose this course.
6.	Because of the recommendation of senior students.
7.	Because I am fascinated by the instructor's personality.
	Level of Efficacy of educational psychology competence
8.	In the future study and teaching, I will make effective use of educational psychology competence.
9.	Compared with other students who have not attended this course, I believe that my educational psychology competence is higher.
10.	I know how to apply what I have learned in this course for my future career as English teacher.
11.	I know how to apply what I have learned in this course into other courses.
12.	I believe that I will succeed in understanding the educational psychology as a foundation in teaching.
13.	I believe that I will succeed in knowing social moral and the cognitive development.
	Perceptions of the educational psychology course
14.	The Educational Psychology course should not be limited to the practice course but should guide students to learn how to learn.
15.	This course helps me in lifelong learning.
16.	All students should improve their Educational Psychology competence before graduation.
17.	The knowledge gained in this course will help my future learning experience.
18.	The instructor made me realize the importance of this course.
19.	My anxiety will decrease when I use my Educational Psychology competence in the future.
20.	The class assignment design of this course is very valuable.
21.	This course changed my view of teaching competence.
22.	Undergraduate students should study such courses.
23.	This course helped me reduce my anxiety about the psychological reality in my future classroom.
24.	I will ask teacher of this course for help in the future.
25.	University should make this course a compulsory course.
26.	Teacher of this course play an important role in my study and research.
27.	English Education students can make full use of educational psychology theories without participating in Educational psychology course
28.	English Education students can practice their teaching well without the educational psychology course
	The most appropriate person to teach for educational psychology course(Others)
29.	My academic Supervisor
30.	Academic psychologist
	Strategy in Seeking Information(Others)
31.	Seek help from academic supervisor
32.	Ask librarians from the near libraries for help
33.	Continue to search in various database

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