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Epistemological Beliefs of English Language Teachers and their Impact on Instructional Practices: A Case Study of Abdul Wali Khan University Mardan

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Abstract
The study's objective was to investigate the epistemological views of English language instructors and how these beliefs are associated to their instructional practices. Nature of the study was quantitative. All faculty members at English department were the population of the study. Twenty respondents were selected through convenient sampling technique. Data about teachers' epistemological beliefs and practices were collected through separate questionnaires. Data was tabulated and analyzed through mean, standard deviation, t-test and co-relation tests. It was found that teachers' epistemological beliefs were not well developed. Significant variations existed among the epistemological beliefs' dimensions. Additionally, there was no conclusive link between teachers teaching practices and their epistemological ideas. It is recommended that the university may arrange a training or a workshop for the teachers on epistemological beliefs relationship with teaching strategies.
Keywords: Epistemological Beliefs, Instructional Practices, ELT, Students' Beliefs

Introduction

Scholars find the idea of the epistemological beliefs system to be fascinating, despite being studied for more than 40 years and pertaining to the nature of knowledge and the act of knowing (Hofer, 2008). There are structural connections between how teachers instruct and the caliber of their students' learning (Mondal & Majumder, 2019). The motivations behind the choices teachers make in their classes are directly related to their personal epistemology. This implies that teachers' epistemological beliefs influence the instructional strategies they select. Students need to comprehend teachers' epistemological stances and how they see information in order to participate effectively in the teaching and learning process (Erwin, 2024).

Teachers' epistemological views have been compared to other academic variables in a number of researches in the field of epistemological perspectives (Letina, 2022). In light of this, educators have examined college students' conceptions of knowledge and the process of acquiring it (Lonka, Ketonen & Vermunt, 2021). The epistemic views of teachers have not previously been the focus of research, despite their regular interactions with college students (Boon, Orozco & Sivakumar, 2022). Thus far, empirical research investigations have not paid much attention to the epistemology of classroom teachers. Speaking with Turkish college students about the lack of research on teachers' epistemological beliefs, Tezci, Erdener and Atici (2016) questioned the shortage of studies on teachers. According to these researchers, it was challenging to comprehend teachers' epistemological conceptions because earlier study had a heavy emphasis on college students. A few evidence-based studies on the epistemological concepts of college students in the west have been conducted, but there hasn't been much research on personal epistemology in other non-Western cultures (Päuler-Kuppinger & Jucks, 2017). Pakistan, along with most other Sub-Saharan African nations, has not yet contributed to the empirical investigation of the ways in which epistemological concepts affect education. The availability of knowledge regarding the epistemological beliefs of student-teachers may aid educators in their thinking to find out more about how those concepts affect teaching and learning, it is imperative that this study be conducted Soulios and Psillos (2016). According to Sadi and Dağyar (2015), teachers choose their pedagogical strategies using an epistemic lens. The results of this study should enlighten policy-makers and educators about how specific epistemological concepts might influence their learning environments.

Statement of the Problem

In the vast majority of western nations, personal epistemology has been extensively explored (Hofer,

2008). Pakistan, however, has not added to the conversation on this important subject. Given this, it would seem to be challenging for teachers to obtain factual data that they could use to back up particular choices they make during the academic process. The premise of the study is in the context of Pakistan, there is a dearth of knowledge regarding personal epistemology. The circumstance may be one of the contributing factors to the nation's failure to meet its educational goals and objectives.

This circumstance could have two possible causes. The first is the Pakistani perspective on reality, while the second is foreign pressure on educational curricula. Regardless of one's level of education, the former is always there in their thinking. There are common cultural ideas among the various tribal communities in Pakistan that are significant to the populace. Most often, some of these beliefs relate to spirituality, which are thought to be outside the realm of human comprehension. Despite the amount of education, these cultural ideas are likely to have an impact on peoples' own epistemology when compared to the western worldview. Therefore, it may be assumed that student-teachers' cultural indoctrination may continue to influence their thinking as they progress through college if it is not consciously corrected. In order to conduct cross-cultural comparison, Schommer (2019) advised academics to examine epistemology from various cultural perspectives. Therefore, teaching Pakistani student-teachers using the framework of western concepts of epistemological orientations can be a dis-service to them.

Rationale of the Study

The predicted instructional strategies and epistemological presumptions of the student teachers were examined in this quantitative study. The study's results will help us learn more about people's unique epistemological views and how they influence instructional practice in educational situations. On account of this, teacher education programs can actively encourage and facilitate specific epistemic worldviews in student instructors, resulting in the desired classroom outcomes. Similar to this, some of the connections between instructors' epistemology and instructional strategies will be of interest to those who design professional development courses for classroom teachers. Making decisions on Pakistani instructors will benefit from this. A number of instructional design professionals have written in-depth articles regarding the necessity of doing learner and other performance-related analyses prior to the implementation of the instructional environment. The finding of this study may make a case for the necessity of explicitly incorporating epistemological ideas into Pakistan's teacher preparation programs.

Research Questions

1. How do epistemological beliefs of English language teachers differ?
   Null hypothesis 1. The epistemic perspectives of instructors are identical.
2. How do instructors' epistemic views and instructional practices relate to one another?
   Null hypothesis 2. Is there any relationship between instructors' epistemological beliefs and their instructional practices.

Literature Review

The concept of personal epistemology is explained by Schommer (2019) as there are four basic stages of believing among them: dualism, relativism, commitment, and relativism. According to dualism, knowledge could only be imparted by authorities or experts and was viewed as either right or wrong (source). Authorities implied absolute knowledge; it was assumed. The merging of personal beliefs and unchanging truth was a part of the second stage, multiplicity. At this moment, college students started to believe that there were other informational sources or paths outside what they had learned from authority. As a possible contradiction to what was already known and learned through authority, students also began to voice their viewpoints. During the relativist era, students abandoned the notion of objective truth in favor of the idea of knowledge as meaning-making, which typically differed from person to person. This implied that what was correct in one situation might not necessarily be correct in another. In the previous phase, college students were merely required to interpret their own experiences and support those interpretations with facts.

Schommer defined an individual epistemology as "a system of more or less independent beliefs, described as beliefs about the simplicity, certainty, and origin of knowledge" (p. 540) in his 1960 publication. This definition of epistemology reads, "concerned with the origin, nature, limits, techniques, and justification of human knowledge" (Hofer, 2008). Baydar (2020) classified epistemology as "...certainty of knowledge, simplicity of knowledge, source of knowledge, and justification for knowing" (p. 279) when examining the epistemological perspectives of student-

teachers. Aspects of epistemology include the nature, sources, and certainty of knowledge as well as the way one defends their understanding of a reality in the face of the many definitions that have been put forward.

Studies from the US and other countries support the notion that instructors' epistemology and instructional practices are closely related. Maravilla and Gómez (2015) noted that teachers need sophisticated epistemological knowledge that is not explicitly incorporated into the curriculum in order to adequately assist higher-order learning. Üztemur, Sevigen, Arıkan and Çelik (2021) examined the knowledge-related beliefs and teaching and learning practices. She discovered that newly enrolled students faced difficulties to finish assignments which were mismatched with their epistemological beliefs. In a similar vein, a sample of 525 elementary school teachers participated in Whitaker (2020) investigation into the impact of teachers' epistemological beliefs prior to the usage of computers for open-ended discussions. Maravilla and Gómez (2015) established that instructors who have more sophisticated epistemological beliefs might use different web-search tactics to identify relevant content than those with less complex epistemology. Furthermore, a noteworthy association was found between the caliber of the open-ended questions created by the student teachers and concepts related to epistemology. These results provide credence to the hypothesis that student instructors' adoption of constructivist teaching strategies in the classroom may be influenced by their highly developed epistemological beliefs.

Personal epistemology is a concept that influences both student learning preferences and teaching strategies. In contrast to teachers with naive epistemology who see truth as "absolute and categorical," imparting knowledge to the learners, teachers with more sophisticated epistemological convictions allow their students to create meaning in the classroom (Atasoy & Küçük, 2020). This is why epistemology plays a "filtering role" in education. According to Letina (2022), educators have concluded that people's epistemological ideas have an impact on their ability to learn, think, and acquire knowledge. Constructivist learners are likely to need more cognitive resources to fulfill higher-order learning goals than learners who hold simple epistemological perspectives.

Methodology

In this quantitative study, instructors at Abdul Wali Khan University Mardan were questioned about their thoughts regarding epistemology and how those beliefs affected the way they teach. Population of the study was all the faculty members who teach at the department of English at Abdul Wali Khan University. A total number of teachers at the department was 29 and 28 teachers were selected as a sample conveniently. Two questionnaires—one for teachers' epistemological views and the other for pedagogical practices—were designed in order to assess teachers of English language epistemological beliefs and pedagogical practices.

Reliability of teachers' overall epistemological beliefs was .828 that is shown in the table below.

Table 1: Reliability test of Teachers Beliefs Measurement Scale

Teachers' Beliefs	**Number of items**	**Cronbach's Alpha Based on Items**
Innate Ability	6	0.87
Certainty of Knowledge	6	0.82
Expert Knowledge	6	0.85
Simplicity of Knowledge	6	0.79
Learning Efforts	6	0.81
Cumulative	30	0.828

Table1: The Cronbach Alpha for each of the four dimensions of epistemological belief

The researchers followed the same process for instructional practice and general epistemological perspectives. Greater ratings on the Likert scale also denoted less sophistication. Table 2 is seen below.

Dimensions	**Teachers Mean (*SD*)**
Epistemology Overview	3.0(*.54*)
Certainty/Simplicity of Knowledge	2.7(*.63*)
Origin of Knowledge	3.3(*.95*)
Rationale for Knowledge	3.5(*.89*)
Attainableness of truth	3.3(*1.2*)
	(n)=28

***Table2**: Descriptive statistics to analyze the dimensions of epistemological beliefs.*

Note. A high Likert scale response indicates agreement with each individual item with less sophistication (n=28).

Prior research has indicated that there were numerous reasons why teachers would not have been able to implement their instructional philosophies (Mondal & Majumder, 2019; Noroozi, 2023). The last three instructional practice questions measured a few factors that could have an effect on teachers' instructional practices. 39.3% (11 out of 28) student teachers indicated that they were able to implement their instructional practices in accordance with their educational philosophy. Among the 28 instructors, 10 believed that their pedagogical theory would prevent them from practicing. Six teachers or 21.5%, were indifferent out of 28.

It's more likely toward the educational philosophy of constructivism/behaviorism, out of 28 respondents, 12 indicated constructivism and 16 indicated behaviorism. The findings showed that teachers were separated into groups based on their approaches to instruction.

In the last question on the instructional practice scale, the teachers were asked to score various elements that could help or hinder them from organizing their learning environment in line with their educational philosophy. The primary factor limiting teachers collectively was projected to be their workload (44.9%). School culture and government influence were second and third, respectively, with 33.6% and 30.8%. Unusual for instructors, none of the components received a higher rating than external assessments, or standardized testing. The data are described in the table below.

Factors	Teachers	
	Frequency	Percentage (%)
Task Force	48	44.9
Organization customs	36	33.6
Authorities	33	30.8
The parents' expectations	23	21.5
Administration of Schools exertion	23	21.5
Not knowing enough.	21	19.6
Uniform testing	17	15.9
A version to taking risks	17	15.9

Table 3: Questions for Instruction

Research Question1: What are the differences between the facets of the epistemological views that teachers possess?

Null hypothesis 1: Their epistemic perspectives are comparable to those of their student teachers. In light of studies that have emphasized the significance of examining student-teachers' epistemological beliefs and their relationship to other academic variables, the researchers decided it would be prudent to investigate whether there was significant variation among the four dimensions of the student-teachers' epistemological beliefs (Hofer, 2008). Similarly, the statistical analysis across the four dimensions was done in this case using the paired-sample t test. At the end of the process, it was established that the epistemological views of all four student instructors differed greatly from one another. Significant differences were seen between the certainty/simplicity of knowledge and the other three characteristics ($t(106) = -5.970$, $p<001$; justification ($t(106) = -7.793$, $p<001$; and attainability ($t(106) = 4.731$, $p<001$). Source and justification ($t(106) = -2.100$, $p<04$), validation and attainability ($t(106) = 1.234$, $p<22$), source and attainableness ($t(106) = -.385$, $p<70$), and so on were the remaining variables. The results demonstrated how radically different epistemological beliefs were from one another. The results demonstrated that not all four types of beliefs were equally true for student teachers. The reported large differences disproved the null hypothesis.

Table 4: T-Test for Differences in teachers' Dimensions

Variables	t-value	p-value
Assurance versus Source.	-5.970	.001
Justification versus Certainty.	-7.793	.001
Confidence versus Achievability.	-4.731	.001
The source versus Rationale.	-2.100	.04
Source against Achievability.	-.385	.70
Reasoning versus Feasibility.	1.234	.22

Note. Be aware that a high Likert scale response denotes less sophisticated agreement with each

*individual item. (n=50). *p<.05, **p < .01.*

Research Question 2: What relationship exists between instructors' instructional techniques and their epistemological beliefs?

Null hypothesis 2: The dominant epistemological presuppositions have minimal bearing on how teachers instruct their students. In some instances, the general epistemological beliefs scale was not employed, but rather the numerous elements of Hofer's discipline-focused epistemological beliefs instrument were compared to other variables (Sadi & Dağyar, 2015; Lonka, Ketonen & Vermunt, 2021). The connection between the student-teachers' basic epistemological ideas and their predicted instructional style was of particular interest to the researchers. After applying the Pearson product moment correlation statistical technique, it was shown that student instructors' broad epistemological ideas did not significantly correspond with their instructional practices. The Pearson coefficient for the student-teachers was r=.17 and p=.08, respectively. As a result, it was concluded that Pakistani student instructors were unlikely to train pupils in accordance with their personal educational philosophy. The researchers were unable to rule out the null hypothesis because of this tenuous link. Information is provided in detail in Table 5.

Variables	Correlation Coefficient (*r*)	Significance Level
Epistemology Overview	.17	.08
Certainty/Simplicity of Knowledge	.44**	.001
Origin of Knowledge	-.08	.41
Rationale for Knowledge	-.08	.39
Attainableness of truth	-.03	.79

Table 5*: Correlation between Dimensions of Epistemological Beliefs and Instructional Practices of Teachers.*

*Note. A high Likert scale response suggests less sophisticated agreement with each specific item, take note. (n=50).*p<.05,**p<.01.*

Null hypothesis 3. Instructional techniques and epistemic ideas are not causally related. We compared the eight-item instructional practice construct to each of the four epistemological stances held by student-teachers (certainty/simplicity, source, justification, and attainability) in order to evaluate the aforementioned null hypothesis. The relationship between instructional practice and the other three dimensions—truth accessibility, knowledge justification, and knowledge source—was only somewhat inverse. It was not possible to establish a correlation between the student teachers' less developed epistemological notions and the findings. However, there was a highly significant positive correlation (r =.44, p.001) between knowledge simplicity and certainty and instructional practice. The certainty/simplicity dimension had a mean of 2.7, whereas the instructional practice component had a mean of 2.6. This finding seemed to suggest that student-teachers with more unstable and interrelated views of knowledge were more likely to use constructivist teaching strategies in their classrooms.

The negligible negative relationships indicated that teachers were more likely to apply constructivist teaching methods, even though a number of their epistemological perspectives (the source of knowledge, the justification for knowing, and the attainability of truth) did not fully develop. The null hypothesis, which maintained that there was no relationship between the epistemological beliefs of student instructors and their methods of instruction, was invalidated by the discovery of a positive, substantial link between certainty/simplicity of knowledge and practice.

Discussion

Lower scores on the scale indicate lower degrees of sophistication, according to the study, which demonstrated that the course of epistemic development among teachers in Pakistan was inconsistent across all four categories. Teachers gave the justification for knowledge component a score of 3.5 and the dimension connected to the certainty of knowledge the highest rating (2.7). In contrast to earlier research conducted in Western contexts (Hofer, 2008; Odebiyi & Choi, 2022), the study indicated that teachers in Pakistan had less developed epistemological beliefs. In any of the four categories, the teachers in Pakistan didn't appear to have sophisticated epistemic notions. Theoretically, these teachers fall into the dualist category (Päuler-Kuppinger & Jucks, 2017). Teachers tended to view information as either black or white during the dualist stage. In addition, they tended to seek information from their lecturers—experts or authorities—more frequently. What the four components of the epistemological beliefs system represent is up for debate. What potential effects may a little misunderstanding in a particular area of epistemological perspectives have on the teaching strategies used by student instructors? An epistemological belief system is based on the assumption that

knowledge exists and functions (Mardiha & Alibakhshi, 2020). Therefore, when instructors exhibit lower levels of competency in any given area, there are repercussions for instructional practice.

Students who feel they have a limited amount of knowledge, for instance, can accept material without checking its correctness. They could not fully comprehend what knowledge actually is. Instructors' limited knowledge viewpoints will eventually be transmitted to the pupils they will eventually educate. Furthermore, the low mean scores for the knowledge justification, truth attainability, and knowledge source dimensions indicated that teachers tended to rely more on experts and authorities as information sources than on their own observations and intuitions to assess the correctness or accuracy of knowledge.

Teachers are more inclined to believe that reliable information is only available to experts and authorities. Therefore, in situations where knowledge seems uncertain, it is possible that teachers will assess material based on how well it fits their own preferences and perspectives (Hofer, 2008). Teachers must be capable of "employing rules of inquiry and embarking on personal evaluation and synthesis of expert viewpoints" in order to successfully teach at an advanced level (Mahasneh, 2018). Soleimani (2020) discovered, for example, that teachers did not consistently demonstrate levels of epistemological development across four of the five epistemological dimensions: certainty of knowledge, control of knowledge, origin of knowledge, rapidity of knowledge, and the framework of knowledge.

As was already indicated, there was no obvious link between the student-instructors' expected teaching strategies and their epistemological convictions. It shows that teachers were not predisposed to align their instructional methods with their educational philosophies, as indicated by the correlation coefficient of $r = 0.17$ and the p-value of $p = 0.08$. Notably, whereas 46.7% of teachers identified as constructivists, 53.3% of them identified as behaviorists. As predicted, our research found that the overall mean for instructional techniques was marginally above average. However, as argued by Çam (2015), it ought to have been influenced by their epistemological views. According to this study, instructors are less likely to adopt the national educational ideology as their own in terms of their instructional strategies. Because teachers eventually become in-service teachers and need thorough preparation to meet the demands of the classroom, educators at universities and teacher preparation institutions should carefully consider the kinds of teacher preparation courses they offer to student teachers. The finding that more student teachers identify as behaviorists contradicts the dominant educational paradigms in many industrialized (Mataka, Saderholm, & Hodge, 2019; Hofer, 2008).

Only one significant positive link between the certainty/simplicity dimension and instructional practice was found in the analysis ($r = 0.50$, p 0.001). Because the certainty/simplicity dimension represents the nature of knowledge component, it may be argued that student-teachers who adopted epistemological perspectives that emphasized the dynamic and interconnected character of knowledge tended to lean more towards constructivism. As a result, they had a higher propensity to use student-centered teaching strategies (Maravilla & Gómez, 2015). Given that knowledge is constantly changing, it is thought appropriate for teachers to promote active student participation in class activities. This result is consistent with other studies (Hofer, 2023; Mondal & Majumder, 2019), which have demonstrated that teachers are more likely to employ constructivist learning pedagogy if their epistemological beliefs are more sophisticated.

Findings

In the light of data analysis, the following findings were drawn from the study.

1. Epistemic development among teachers in Abdul Wali Khan University Mardan was inconsistent across all four categories.
2. It was found that a slight majority of the teachers were using positivist teaching method as compared to constructivist method.
3. The study also found that three slightly negative relationships between the teaching strategies and the epistemological views of instructors. Specifically, the certainty and simplicity of knowledge dimension demonstrated an improvement, but the source, justification, and attainability dimensions did not exhibit concurrent gains.
4. Only one significant positive link between the certainty/simplicity dimension and instructional practice was found.
5. It was found that there was no obvious relationship between the instructors' teaching strategies and their epistemological beliefs.

Recommendations

1. Teachers' epistemological beliefs are novice and undeveloped, therefore it is recommended that the university may arrange a training or a workshop for the teachers.
2. Furthermore, it is recommended that educators may receive training in constructivist teaching methods in order to develop a mutually relevant relationship between the nature of knowledge and pertinent teaching strategies.
3. For future research, it is recommended that focus groups interviews, and classroom observations maybe applied because it would make it easier to pinpoint important issues that teachers might have.

Conclusion

In summary, the primary objective of this quantitative study was to examine the connections between the epistemological beliefs of Pakistani teachers and their instructional practices. Majority of the previous studies were carried out by academics from Western cultures, previous studies had suggested a connection between epistemological perspectives and instructional practices. In this study, it was found that only the dimension relating to the certainty/simplicity of knowledge significantly predicted the instructional practices of teachers. This was among the several aspects linked to epistemological beliefs. The general system of epistemological ideas held by the teachers was a little naive, and their teaching methods were average. The current study has demonstrated that there are substantial disparities among the four dimensions of epistemological viewpoints, despite the only moderate development of each dimension. The researcher speculated that the cultural background of the teachers may have prevented them from discovering a meaningful connection. The aim of the study is to initiate a discourse among scholars regarding the imperative for educators to regularly monitor and evaluate the epistemological positions of their teachers. In Pakistan, many aspects of epistemological concepts are still unknown. Significantly, the nation's educational philosophy might have a greater influence on the quality of human resources than other factors. Such data will enable Pakistani policymakers, curriculum designers, teacher educators, and in-service instructors to strategically employ epistemological stances.

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