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## **A Comparative Study of Critical Thinking Skills among Male and Female University Teachers and Students in South Punjab**

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### **ABSTRACT**

This research examined the critical thinking skills of teachers and students at the university in South Punjab, Pakistan, considering the differences between the genders. Although the value of critical thinking as a key to academic success is evident, the Pakistani educational system remains dedicated to rote memorisation at the cost of training higher-order thinking abilities. With a quantitative design, 382 respondents were sampled, and they comprised male and female teachers and students in six public universities. The results showed that respondents had good interpretation, understanding, analysis and evaluation abilities; mean scores were always above average. Participants claimed to be able to recognise main ideas, distinguish between facts and opinions, understand that certain assumptions are hidden, and determine the credibility of sources. Although teachers and students showed a high level of both developed and active critical thinking skills, the findings reported by both teacher groups emphasised the necessity to enhance the incorporation of critical pedagogy in the curriculum and professional development. The authors have concluded that gender-inclusive learning environments and lifelong education of teachers are crucial to empower critical thinking throughout higher education.

**Keywords:** Gender differences, higher education, Critical thinking, interpretation, analysis, evaluation, South Punjab.

### **Introduction**

The word "critical" comes from the Greek word "kritikos," meaning "to judge," originated from the way analysis and Socratic reasoning shaped thinking during that time (McGregor, 2007). This term evolved into the Latin word "Criticus," which spread into various languages (Hançerlioglu, 1996). According to the Critical Thinking Corporation (2006), critical thinking is more than memorisation. When students engage in critical thinking, they are encouraged to think independently, question assumptions, analyse and



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synthesise information, and take it a step further by developing new hypotheses and testing them against the facts. Critical thinking is the process of making judgments or determining what is true or false. It's more than just memorising facts; it involves thinking deeply and making connections between ideas to understand the bigger picture. Critical thinkers are skilled at recognising patterns, evaluating evidence, and considering different perspectives.

Critical thinking functions as a mental ability that demands systematic operation for the logical evaluation and neutral assessment of information. Academic success heavily relies on critical thinking, particularly at universities, because students, together with their teachers, need to perform advanced cognitive abilities involving problem-solving and reasoning, and independent judgment. Its critical role supports academic research alongside intellectual advancement, along with factual decision-making within every domain (Paul & Elder, 2014).

In my opinion, critical thinking is essential for university teachers. This helps educators develop the right strategies to offer quality education to students and enables students to think critically and participate actively in class. Furthermore, when teachers practice critical thinking, they encourage students to do the same and improve their thinking skills (Ennis, 2011). Teachers also apply critical thinking in their professional development to evaluate the effectiveness and relevance of their practices, which also guides students (Paul & Elder, 2014).

In the case of a learner, critical thinking skills are essential for improving their performance. Analysis is described as a method by which students can understand an idea, gather information about it, and form a personal opinion that is unique from others because it is based on analysis. It is especially important in university education systems, particularly at the undergraduate level, where students are expected to reason deeply and creatively. This paper clearly shows that students who excel at critical thinking have an advantage in overcoming academic challenges and participating productively in scholarly debates (Sullivan & Willcock, 2015).

However, the data suggest that critical thinking skills may be affected by gender in their development and use. According to the studies on the relationship between gender and education, boys and girls and male and female teachers might have different strengths and weaknesses in critical thinking skills, which may be caused by an interaction of factors such as gender socialisation, gendered education, and culture (Halpern, R., 2012; Li & Lee, 2018). For instance, gender differences in communication, confidence, and cognition may influence mind application, while in an academic setting, more so critical thinking (Li and Lee 2018). It would be wise for specialists in the learning process to understand these potential differences as they seek to promote the critical thinking development with equity between the genders (Halpern 2012).

### **Statement of the Problem**

One of the major problems in the education system in Pakistan is that the teachers and students focus on rote memorisation, and critical thinking skills are neglected, which creates several problems for the further education of the students. In Pakistan, 47.7% of teachers are male, while 38.6% are female. Similarly, 44.8% of students in universities are female, whereas the remaining 55.2% are male. Therefore, the focus of the study was on the comparative analysis of the critical thinking abilities of male and female teachers and students in Pakistan.



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### **Objectives of Study**

The study has the following objectives:

To identify the level of university teachers' critical thinking abilities.

To identify the level of university students' critical thinking abilities.

### **Research Questions**

The following were the research questions of the study:

What is the level of university students' critical thinking abilities?

What is the level of university students' critical thinking abilities?

### **Significance of the Study**

Cultivation of the knowledge regarding sex or gender-based differences in critical thinking.

The first is the contribution to the knowledge on the effects of gender on the critical thinking skills of both teachers and students. Although there is research on the gender differences in different cognitive aspects, little attention has been paid to critical thinking disposition at university through a gender lens (Halpern, 2012; Li & Lee, 2018). The focus of this research will be to establish whether and how male and female Teachers and students perform tasks related to critical thinking, varying with the society's culture or education system. In this study, gender differences in critical thinking will be investigated, and, therefore, such information through the development and use of critical thinking in higher learning institutions shall be of great value.

### **Implications for Pedagogical Practices and Curriculum Design**

The results of this study will be useful for university teachers in an attempt to produce more effective training and adjust curricula that will address differences in learning and critical thinking between male and female students. Since gender stereotypes influence how students approach problem-solving tasks (Bailin et al., 2019), the findings outlined above will assist educators in creating a learning environment where both male and female students develop critical thinking skills. Furthermore, the outcome will also help in understanding how the implementation of gender sensitive teaching approaches can help in the improvement of critical thinking of students, for all the learners to have the appropriate support to facilitate their academic success (Liu & Liao, 2020).

### **Delimitations of the Study**

Study constraints are the following:

The current study was delimited to all the government universities of South Punjab.

The study was confined to university teachers and students only.

### **Research Design**

The research design replicates the entire study, demonstrating how the objectives were properly addressed. The investigation is multidimensional, exploring the impact of gender and conducting a comparative study related to teaching and learning the critical thinking process among university teachers and students in South Punjab universities. For this purpose, a quantitative research design was employed.

### **Population of the study**

In research, the population is the total set of such individuals, groups, or entities from which the researcher wants to draw a sample for the purpose of studying certain characteristics, and is the group to whom the results of a study are meant to be generalised (Creswell & Creswell, 2018). The population was limited to teachers and



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students at the university level, from public and private higher education institutions, for this study.

**Table 2.1 Population:**

S #	University	Male S	Female S	Total Students	Male Teachers	Female Teachers	Total Teachers	Total
1	Ghazi University	4922	6016	10938	99	56	155	11093
2	UE DGK	2610	3190	5800	69	30	99	5899
3	UE Multan	5532	6394	11626	95	55	150	11776
4	BZU Multan	11997	14662	26659	399	231	630	27289
5	IUB BWP	11700	14300	26000	1166	634	1800	28800
6	KFUIT RYK	6131	7495	13626	167	131	298	13924

### Sampling Technique and Sample Size

In research, this selection of a subset of individuals from a specified population to represent the population as a whole in the research study is called sampling (Creswell & Creswell, 2018). Given that it is not feasible to collect data from every member of a large population, in particular at universities, a judicious selection of subjects enables the scientist to collect meaningful and generalizable data within time and resource limitations.

S #	University	Male S	Female S	Total Students	Male Teachers	Female Teachers	Total Teachers	Total
1	Ghazi University	14	16	30	7	5	12	42
2	UE DGK	6	12	18	3	3	6	24
3	UE Multan	15	20	35	6	4	10	45
4	BZU Multan	40	50	90	8	7	15	105
5	IUB BWP	40	50	90	12	10	22	112
6	KFUIT RYK	20	25	45	5	4	9	54
Grand Total		135	173	308	41	33	74	382



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### Data Analysis

Table 4.6

Respondents' views regarding the Interpretation & Understanding dimension of critical thinking skills

Statements	N	Mean	SD
1. I can identify the main idea in a complex text or discussion.	382	3.51	.947
2. I distinguish between facts and opinions in academic arguments.	382	3.44	1.195
3. I summarise information accurately in my own words.	382	3.63	1.22
4. I understand the purpose behind a speaker's or writer's message.	382	4.03	.903
5. I recognise hidden assumptions in arguments.	382	3.75	1.20

Table 4.6 revealed the responses of the respondents regarding the interpretation and understanding dimension of critical thinking skills. The analysis shows that a large number of respondents indicated that teachers' and students' interpretations and understanding are very good. All of these responses are above average, demonstrating a strong understanding of interpretation and effective application of critical thinking skills.

### Analysis & Evaluation

Table 4.7

Respondents' views regarding the analysis and evaluation dimension of critical thinking skills

Statements	N	Mean	SD
6   I evaluate the credibility of sources before using them.	382	3.75	1.166
7   I compare different viewpoints before forming an opinion.	382	3.73	1.179
8   I assess whether conclusions follow logically from the evidence.	382	3.75	1.182
9   I recognise logical fallacies in discussions or readings.	382	3.71	1.192
10   I seek clarity when presented with vague or ambiguous information	382	3.96	.601

Table 4.7 displayed the responses of the respondents regarding the analysis and evaluation dimension of critical thinking skills. The analysis shows that many respondents reported that teachers' and students' analysis and evaluation skills are very good. All these responses are above average, indicating strong analysis and evaluation skills and effective application of critical thinking skills.

### Conclusion

Both Table 4.6 and Table 4.7 show that the respondents were well-developed in terms of critical thinking skills on both the interpretation and understanding dimension and the analysis and evaluation dimension. The above results revealed mean scores that exceeded the average, which indicates that teachers and students can effectively recognise the main ideas, distinguish between facts and opinions, summarise information, and identify hidden assumptions. In like manner, they also stated that they were great source evaluators, viewpoint comparators, logical consistency assessors, fallacy detectors, and input seekers. In sum, the findings conclude that not only interpretation but also



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evaluation skills are highly developed among the respondents and indicate the positive use of critical thinking skills in academic settings.

### Recommendations

The following recommendations were made in light of the findings of the study:

It is recommended to promote critical thinking across the entire curriculum. The skills of critical thinking and problem-solving can be reinforced by integrating them into all subject areas.

It is recommended to encourage Professional Development for Teachers. Regular training and workshops, which will boost critical pedagogy education, should be conducted in the institutes. Particular effort can be directed to support male teachers in applying strategies that are successful for their female counterparts.

It is recommended to foster a Gender-Inclusive Learning Environment. As females showed more critical thinking, universities ought to consider the teaching methods of female teachers as a model and spread them throughout the faculties. This may take the form of peer mentoring or other co-teaching models.

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