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Pre-service Teachers' Cognitive or Non-Cognitive Preferences: Variance in the Learning Strategies from the Lenses of Gender Category in Balochistan, Pakistan

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Abstract: *Male and female students' choices always matter when it comes to the selection of any profession or any kind of strategy that is why our study is of supreme importance. This study was conducted to make sure that male students select different learning strategies for their lecture than female students and vice versa. The study was conducted in the Department of Education at the University of Loralai in Balochistan. It was a descriptive (a type of quantitative) research design for which participants were randomly selected through a simple random selection technique. For gender-wise comparison, 101 were male while 56 were female students who filled out and returned the questionnaires. The scale adopted by us from Jimenez et al. (2018) had 17 items in total which were spread in three dimensions i.e., micro-learning strategy (MLS; 05 items; α=0.83), keys for memory and metacognition learning strategy (KMMLS; 05 items; α= 0.65) and emotional social support learning strategy (ESSLS; 07 items; α= 0.61). The total Cronbach α of the scale was also in a highly acceptable range (α=0.84) achieved through running a pilot study of 09 respondents. For validation of the scale, we relied on factor analysis run in previous studies (e.g., Jimenez et al. 2018). The results proved that the students had to use always all three types of learning strategies when they have to learn their lectures. Upon testing of hypotheses, significant differences were found only in the keys for memory and metacognition learning strategy, and overall learning strategies, which further revealed that males had higher mean scores than female students. It then concludes that male students prefer cognitive learning strategies for lecture learning. The results were discussed in the views of current and past literature and suggestions were given based on the results.*

Introduction

We simply say that learning strategies are steps that ease lessons and entertain. Taking notes, organizing and underlining the important points, and finally summarizing, all come under the umbrella of learning strategies definitions (Iqbal, et al. 2022). In countries like Saudi Arabia (Almoslamani, 2022), Spain (Muelas & Navarro, 2015), Pakistan, and in various other countries rote learning has remained the traditional learning strategy. It is fact that rote learning makes the students passive (Almoslamani, 2022; Al-Seghayer, 2021; Kim & Alghamdi, 2019), and the Pakistani education system focuses the rote learning at the lower level. Therefore, the current researchers want to check students' interest in learning strategies through gender comparison.

Good performance and high exam scores are predictors of academic achievement

(Almoslamani, 2022; Vermunt & Donche, 2017) which should be linked to learning strategies; therefore, to see which learning strategy is preferred is important to know through gender comparison with reference to Balochistan, Pakistan.

Literature Review

In different contexts research about learning strategies has many gaps in either way that somewhere the context was Europe (Jiménez et al., 2018) or Gulf countries (Almoslamani, 2022) while the other way it was explored in the field of the English language specifically (Al-Seghayer, 2021). This study aimed to explore learning strategies through gender comparison in the Pakistani context and sought the most preferred learning strategies in male and female students. It is also a proven fact that the background and culture of learners shape their learning strategies e.g., social and financial background has particular effects on the learning strategies selection (Chiu et al. 2007), thus socio-cultural experiences shape their strategies of learning. Other researchers, e.g., Vega-Hernández et al. (2017) on Spanish university students revealed cognitive and learning control strategy was most preferred while study habits were the least preferred. Díaz et al. (2019) in Peru university students found that students were mostly using meta-cognitive strategies, processing of the information strategies, and control of the context strategies. Specifically in English as a major subject and in gulf countries e.g., in Saudi EFL learners, memory and cognitive strategies were most favored while the social, affective, and compensation learning strategies were least favored (Al-Otaibi, 2004). Other researchers that had worked on the same phenomenon had similar results e.g., cognitive learning strategies were most preferred (Al-Refay & Koura 2010; Alhaisoni, 2012; Aljuaid, 2010; Aljuaid, 2015; Alkahtani, 2016; Alhaysony, 2017) while affective (Al-Refay & Koura 2010; Alkahtani, 2016; Alhaysony, 2017), and memory strategies were least preferred (Alhaisoni, 2012; Aljuaid, 2010; Aljuaid 2015; Alkahtani 2016; Alhaysony, 017). Therefore, overall the concluding remarks are that learners prefer cognitive and meta-cognitive strategies while they use effective strategies and memory strategies the least. So, what will be the case in the Pakistani context is a matter of concern. To explain this concern this study has been designed.

Justification of the Study

As written in the review part, learning strategies have been investigated in Europe, Gulf countries, and in the field of the English language specifically. Previous reports declared that learning strategies have not been explored in the Pakistani context, particularly in the higher education of Balochistan, which is why it is an important place to dig into this matter deeply.

Objectives of the Study

Since this was a purely gender-based comparison study, therefore it examined the variance in the overall mean score of the three learning strategies in the male and female preservice teachers. Further, the variance was also examined respectively (one by one) in micro-learning strategy, keys for memory and metacognitive learning strategy, and emotional social support learning strategy in the male and female preservice teachers. To meet the objectives of the study we designed the following alternative hypotheses.

Hypotheses of the Study

H_1: *Male and female pre-service teachers will show a significant difference in the mean scores of the micro-learning strategy use*

H_2: *Male and female pre-service teachers will show a significant difference in the mean scores of the keys for memory and metacognition learning strategy use*

H_3: *Male and female pre-service teachers will show a significant difference in the mean scores of the emotional-social strategy learning use*

H_4: Male and female pre-service teachers will show significant differences in the mean scores of overall three learning strategies

Methodology (Design, Population, Sample, and Instrumentation)

The Department of Education at the University of Loralai in Balochistan is the most populated department having approximately 400 students in different programs of study. This research study was conducted in a single department because the phenomenon of the study was the preservice teachers. It was a descriptive survey (a type of quantitative) research design for which participants were randomly selected through a simple random selection technique. The target population of the study was all the preservice teachers that were enrolled in the department of education for session 2020-2024. For gender-wise comparison, 101 were male while 56 were female students who filled out and returned the questionnaires.

The demographic information that was shown by the participants was as 64.3 % were male and 35.7 % were female. The age range of the participants was from 20 to 26 years. Most of the respondents were above 20 years of age. Regarding the educational year, most of the respondents (39.5 %) were in the 2nd year of their study. In the educational program, more than half of the students (52.2 %) were studying in the BS Education program. 38.2 % of the students have a 3.3 and above GPA score.

The scale adopted by us from Jimenez et al. (2018) had 17 items in total which were spread in three dimensions i.e., micro-learning strategy (MLS; 05 items; α=0.83), keys for memory and metacognition learning strategy (KMMLS; 05 items; α= 0.65) and emotional social support learning strategy (ESSLS; 07 items; α= 0.61). The total Cronbach α of the scale was also in a highly acceptable range (α=0.84) achieved through running a pilot study of 09 respondents. The scale was constructed on a four-point Likert scale having a score of 4 = *Always use*, 3 = *often use*, 2 = *rarely use* and 1 = *never use*. For validation of the scale, we relied on factor analysis run in previous studies (e.g., Jiménez et al. 2018). The adopted scale is valid and standardized through psychometric techniques (e.g., exploratory and confirmatory factor analysis) established by recent researchers e.g., Jiménez et al. (2018) and Almoslamani (2022).

According to CLT (central limit theorem), if the sample size is greater than 100 then one can ignore the test of normality because of the exceeding limit of the sample size (Altman & Bland, 1995; Ghasemi & Zahediasl, 2012), so we did not apply the test of normality. We assumed our data to be nearly normally distributed since our sample size exceeded the limit; therefore, we chose the mean as a parametric measure for the analysis.

Results and Discussion

In the results and discussion part, to measure the objectives all the hypotheses were tested. The major findings of the research, which has highlighted the gender difference in the preferences of learning strategies, have been reported below in table 1.

Table 1. Gender Variance in Learning Strategies

Dimension	Gender	*N*	Mean	*SD*	*T*	*Df*	*Sig*
Micro strategies	Male	101	3.217	.596	2.88	132.06	.005
	Female	56	3.948	.586			
Keys of memory and metacognition	Male	101	3.338	.580			
	Female	56	3.089	.482			
Emotional-social support	Male	101	3.482	.563			
	Female	56	3.390	.469			

Overall score of learning strategies	Male	101	3.346	.452	2.967	155	.004
	Female	56	3.142	.387			

Note: **Significant <0.000 level

Table 1 demonstrates the differences found in the preferences of learning strategies between male and female pre-service teachers. Results revealed significant differences in keys for memory and meta-cognition learning strategies that means male pre-service teachers had more preference for this learning strategy compared to female pre-service teachers, which favors hypothesis 2. While no significant differences were found in the rest of the two learning strategies i.e., micro learning strategies and emotional social learning strategy for hypotheses 1 and 3. Further, also a significant difference was found in the overall use of learning strategies, which determined that male pre-service teachers preferred all these learning strategies the most as compared to female pre-service teachers, which favors hypothesis 4. Hence, in light of the above-stated results, the 2nd and 4th hypotheses are proven to be accepted.

As per the discussion, table 1 shows the significant differences in the keys for memory and meta-cognition learning strategy and reveals that males (3.338) scored higher than females (3.089). It reveals that male preservice teachers in totality had better perceptions and understandings about the use of keys for memory and meta-cognition learning strategy. Since the differences were significant, thus the hypothesis (H_{02}) was accepted. It can be interpreted that male pre-service teachers at the University of Loralai, Balochistan level used the keys for memory and meta-cognition learning strategy because they might consider themselves to process and store the information in a better way. It seems that they always organize the information, process it in their minds, and then store it for exams. Further, rather than to like discussion of their lesson with their teachers they like to choose cognition and metacognition as is reported in the current study. In concluding the remarks, it is stated that the keys for memory and meta-cognition learning strategies are completely favored by male participants only.

This result is likely to be the results of past studies where researchers revealed the same phenomenon with similar results e.g., cognitive learning strategies were most preferred (Al-Refay & Koura 2010; Alhaisoni, 2012; Aljuaid, 2010; Aljuaid, 2015; Alkahtani, 2016; Alhaysony, 2017). Therefore, concluding the remarks, it is interpreted that at the Balochistan (Pakistan) level, male preservice teachers mostly use cognitive strategies for their lectures.

Further, for the fourth hypothesis, table 1 shows the significant differences revealing that males (3.346) scored higher than females (3.142). It reveals that male preservice teachers in totality had better perceptions and understandings to use the overall learning strategies. Since the differences were significant, thus the hypothesis (H_{04}) was accepted. Therefore, it is interpreted that the male pre-service teachers were always using all of the strategies for the lecture in a better way than females. It is an extremely good choice to use all the learning strategies in totality. This result is supported by the recent study of Almoslamani (2022), where he revealed that male and female respondents were always different in using the overall learning strategies and stated that the mean score of the female students was greater than the male students. However, in our study, it was the opposite; the male students got a higher mean score than the female students, which proves that males had a better understanding of all of the learning strategies in Pakistani society. It also gives a conception that it is might possible that since the literacy rate of females in Pakistan is low, therefore, they might not get as much understanding of the strategies as the males, therefore, this result arises. Besides, it

is a unique result because, at the university of Loralai level in Balochistan, the faculty member of various departments can take this research as a guideline to plan their lesson because they will know what strategies are preferred at Loralai University.

Conclusion and Recommendations

This study assessed the pre-service teachers' use of learning strategies in the context of Balochistan (Pakistan) at the University of Loralai using the gender category for comparison. It was concluded that the male preservice teachers as compared to the females preferred the key for memory and metacognitive learning strategy. It indicated that teachers have to rethink their lesson planning. The current study recommends that classroom teaching should be aligned with the preferred learning strategy. If the teaching faculty has to enhance their teaching-learning process then they must plan their teaching according to the student's preferred learning strategy.

It is also recommended that future researchers should do further research that why the above-mentioned learning strategy is most favored by male preservice teachers than females because in coeducation classrooms the teachers have to teach both genders simultaneously so a learning strategy should be searched that suits both genders.

Limitations of the Study

The current study took place in a single entity i.e., only at the Department of Education, University of Loralai, Balochistan, Pakistan. However, it is a single entity study but still the results can be replicated in other universities (at the pre-service teachers' level). This study might be restricted to the generality of the larger population, but still, it can give essential implications. The prospective investigators should think of these limits and can do a considerably larger study on similar variables to make the generality probable.

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