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RELATIONSHIP BETWEEN UNIVERSITY STUDENTS' METACOGNITIVE ABILITIES AND ACADEMIC ACHIEVEMENT IN HISTORY

Abstract

This study explores the relationship between university students' metacognitive abilities and their academic achievement in History. Metacognitive abilities encompass the use of cognitive strategies (CSU), self-regulation (SR), and cognitive self-consciousness (CSC). In contrast, Academic Achievement in History encompasses the first two stages of Blooms' cognitive domain, i.e., knowledge and comprehension. Thirty-one (31) university students enrolled in BS History in a public sector university were the sample population. They were taught the Higher Education Commissions' approved curriculum for the subject of History through metacognitive instructional strategies for six months. After six months of teaching, two tools were administered to collect data, i.e., a metacognitive abilities questionnaire (MAQ) to measure the level of university students' metacognitive abilities, whereas the Academic Achievement in History Test (AAHT) was used to measure university students' Academic Achievement in History. The data analyzed by SPSS version 26 and spearman r was calculated to determine the relationship between university students' metacognitive abilities and their academic achievement in History. The study results affirmed that metacognitive abilities play a significant role in enhancing academic achievement in History. Thus, university faculty are recommended to develop metacognitive abilities for long-life learning among learners.

Introduction

Ahmed and Ahmed (2017) reported that students possess a low level of abilities to solve problems, think critically, and life-long learning due to the traditional teaching-learning process and cram culture. Similarly, Khurram (2020) described that most students lack primary knowledge about Pakistan since most students and their teachers concentrate on achieving exam marks. Result statistics indicate that Pakistani students show a moderate or poor conception of the content (MOFEPT, 2018); however, they are securing good marks in departmental, institutional, and Boards of Intermediate and Secondary Education (BISEs) examinations. Graduate Record Examination (GRE), Higher Education Aptitude Test (HAT), and Graduate Assessment Test (GAT) results also show a below-average conception of the content. Students are being taught traditionally, which promotes cram to score culture Khurram (, 2021). This indicates that traditional teaching and cramming are producing negative results on learning (Ahmed & Ahmed, 2017)

Metacognitive instructional strategies are the new teaching methodology that promotes metacognitive abilities among learners (Wagaba, 2016; Khurram, 2021). Eriyani (2020) reported that metacognitive abilities as the key to learning. In contrast, Schofield (2012) reported that teachers should learn metacognitive abilities to promote their teaching. Similarly, Muhali et al. (2019) indicated that metacognitive abilities are 21st-century abilities. Khurram (2021) reported that metacognitive abilities facilitate the learners to regulate their cognitive activities and tasks. These abilities encompass cognitive strategy use, self-regulation, and cognitive self-consciousness (Khurram, Islam & Bilal, 2020). Multiple researchers, including Dörr and Perels (2019), Eriyani (2020), Khurram (2020), and Wagaba et al. (2016), have already used this term. In comparison, Cetin (2015) and Gogh and Kovari (2018) indicated that metacognitive abilities are essential for lifelong learning. Hence, the teaching-learning process requires immediate attention since students lack comprehension in History and their academic achievements are moderate. This situation encouraged exploring the relationship between metacognitive abilities with their academic achievements in History at the university level.

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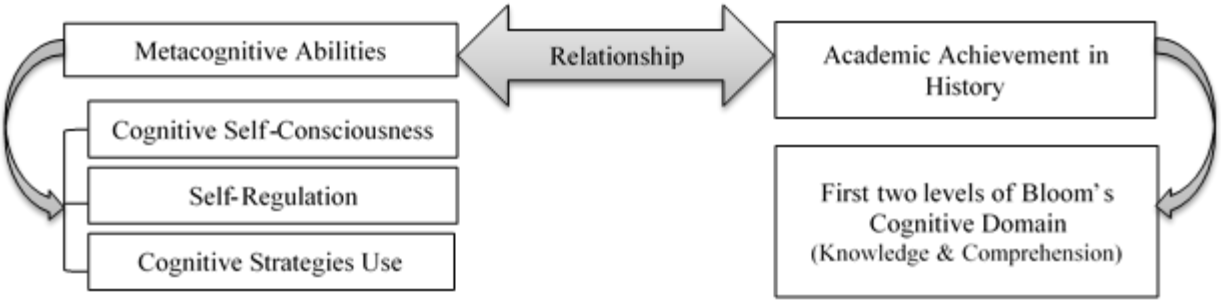
History is essential because it allows us to reshape individuals and societies. It helps to bridge the gap between the past and the present. However, Pakistanis have no grasp on and are unable to comprehend Pakistan's History. Metacognition has yielded fruitful results for university students in a variety of subjects by improving metacognitive abilities. Therefore, it was necessary to conduct research teaching History of Pakistan with metacognition to discover relationships between metacognitive abilities and academic achievement in History

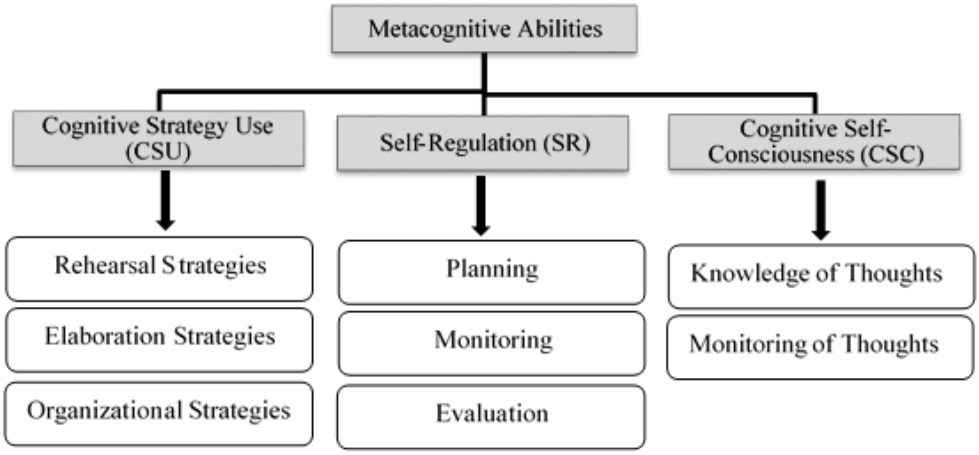


Literature Review

The idea of metacognition was presented by Flavell in the 1970s and got significant recognition. Escolano-Pérez et al. (2019) reported that metacognition organizes and manages human cognitive system. Khurram (2021) reported that metacognition encompasses two Greek words, "meta" and "cognition." Meta means "about," and cognition means "thinking" (Flavell, 1979). Wagaba (2016) indicated Knowledge of Cognition and Regulation of Cognition as the key components of metacognition. He further cited that knowledge of cognition is further subdivided into declarative knowledge, procedural knowledge and, conditional knowledge. A learner may understand the Indus valley civilization (Declarative knowledge) and draw the concept map of the Indus valley civilization (Procedural knowledge). Khurram (2021) further reported that declarative and procedural knowledge are domain-specific whereas, conditional knowledge provides the cause to use them. For example, a university student knows about the Ideology of Pakistan. However, most of them fail to explain or feel a hurdle to express. Here they have to select proper knowledge to explain it (Conditional knowledge).

Similarly, Stephanou and Pointing (2017) reported that Regulation of Cognition enables the learners to plan, monitor, and evaluate their learning. Before initiating any task, a learner plans tasks like resources, time allocation, and setting goals. This process is called planning (Radovan, 2019). Monitoring encompasses tracking the achievements accordingly. In contrast, evaluation includes the assessment of your learning results and efficiency (Wagaba, 2013). Thus Regulation of Cognition indicates that appropriate planning with careful monitoring and concrete evaluation helps to select a domain-specific strategy.

Metacognitive abilities produce in-depth knowledge (Surati et al., 2021) and decide learning struggle and knowledge transfer (Alshreif, 2021). Martin Jr et al. (2021) reported that metacognition has significance for university-level subjects. Similarly, metacognitive reading strategies improve the learners' reading comprehension, also. Metacognitive abilities increase retention and memory (Lavis & Mahy, 2021), improve high learning control (Melissa Ng Lee Yen, 2020), and enhance social learning (Kuzyk et al., 2020) essential for history subject. Khurram (2020), Khurram (2021), and Wagaba (2016) reported the presence of multiple metacognitive abilities, out of which Cognitive Strategy Use (CSU), Self-Regulation (SR), and Cognitive Self-Consciousness (CSC) were appropriate to learning at the university level programs.



Khurram (2020), Khurram (2021), and Wagaba (2016) reported that Cognitive Strategies Use (CSU) includes rehearsal, elaboration, and organizational strategies. Lemaire (2016) suggested that the use of cognitive strategies benefits comprehension. Similarly, Kim (2016) reported their efficiency in terms of enhancing intellect. At the same time, Lowe (2010) cited them as the agent to enhance classroom participation. Inzlicht et al. (2021) reported that self-regulation is a vital part of human functioning that aids in achieving objectives. Whereas Robson et al. (2020) stated it as the proactive and clairvoyant to prospect. Multiple researchers, including Stephanou and Mpiontini (2017 cited that planning, monitoring, and evaluation are sub-components of Self-regulation. Khurram (2021) indicated that appropriate planning, trailed by monitoring and evaluation, improves learning effectiveness. He further reported that cognitive self-consciousness encompasses the awareness and monitoring of personal thoughts. It is beneficial in decision-making, correlation with examination, self-efficacy, pace-making, and effort convergence (Khurram, 2020). Both offline and online measures are used to gauge metacognitive abilities. However, Khurram (2020), Khurram (2021), and Wagaba (2016) used Metacognitive Abilities Questionnaire (MAQ) to measure metacognitive abilities among university students.

Peng and Kievit (2020) suggested that metacognitive abilities are linked with further development. Academic achievement is the key tool for evaluating learners' output and educational outcomes (Liu, Peng & Luo, 2020). However, the academic achievement of university History students encompasses the extent to their performance in terms of the first two levels of the cognitive domain (i.e., knowledge and comprehension) for the content provided by the Higher Education Commission of Pakistan. This was the three (03) credit-hour course namely History of Pakistan (1947 to 2013) encompassing Pakistan: A Profile, Quaid-i-Azam as Governor-General and Early Problems of Pakistan, First Constituent Assembly (1947-54), Objectives Resolution, Basic Principles Committee, Issue of Representation and Parity between East and West Pakistan, Provincial Autonomy, Second Constituent Assembly (1954-56), Formation of One Unit as the basis of Parity between East and, West Pakistan, Constitution of 1956 and disruption of parliamentary democracy, Ayub Regime (1958-1969), Yahya Regime (1969-1971), Zulfiqar Ali Bhutto Era (1971-1977), Zia-ul-Haq Regime (1977-1988), Restoration of Democracy and Frequent Change of Governments (1988-1999), Benazir Bhutto and Nawaz Sharif as prime ministers, Musharraf Era (1999-2008), Elections of 2002, 2008 and 2013, and Formation and working of the democratic governments, Foreign Policy of Pakistan.

The Objective of the Study

The study's main objective was to explore the relationship between university students' metacognitive abilities and their academic achievement in History**.**

Research Questions of the Study

Two main research questions were formulated to achieve the objectives of the Study:

RQ_1. Is there any relationship between university students' metacognitive abilities and their knowledge in History?

RQ_2. Is there any relationship between university students' metacognitive abilities and their comprehension in History?

RQ_3. Is there any relationship between university students' metacognitive abilities and their academic achievement in History?

Significance of the Study

The teaching of History is essential because it helps us to reshape individuals and societies. It contributes to the connection between the past and the present. But Pakistanis have no grip on and are unable to grasp Pakistan's History. Metacognition has produced fruitful results for university students in several subjects through the improvement of metacognitive abilities. It was, therefore, necessary to conduct a study on the teaching "History of Pakistan" with metacognition and find relationships between metacognitive abilities and academic achievement in History in terms of knowledge and understanding between metacognitive ability and academic achievement.

Methodology

The study was quantitative and descriptive in nature, whereas one group pretest-posttest was the design of the study. Thirty-one (31) randomly and willingly selected university students enrolled in a public sector university of Punjab, Pakistan at BS History program were the participants of the study. They were taught BS History by using metacognitive instructional strategies for six months since metacognitive instructional strategies promote metacognitive abilities (Khurram, 2020; Khurram, 2021). Data were collected by using two different tools, namely the university students' metacognitive abilities questionnaire (PTMAQ) and Academic Achievement in History test (AAHT). The reliability alpha value of university students' metacognitive abilities questionnaire (PTMAQ) was 0.78, which is above the acceptable value of 0.7 (Lawshe, 1969).

Similarly, its overall Content Validity Index (CVI) was 0.885, and the CVR value for each item was more than 0.49 (for sixteen experts), which is considered acceptable (Lawshe, 1969). Item-wise content validity ratio (CVR) of the Academic Achievement in History test (AAHT) ranged from 0.57 to 0.86. Allahyari et al. (2011) and Lawshe (1969) reported that the CVR value greater than 0.51 is acceptable for fourteen (14) panelists. Similarly, Content Validity Index (CVI) value was 0.83, which was greater than 0.7, which is an acceptable value as reported by Allahyari et al. (2011). The Cronbach's alpha reliability value of the Academic Achievement in History test (AAHT) was 0.9, which is greater than the acceptable value. The data were collected before and after the class teaching through pretest and posttest. The mean gain score on university students' metacognitive abilities and Comprehension in History was used to analyze the relationship accordingly.

There was no outlier among the data sets, i.e., university students' metacognitive abilities and Comprehension in History. Both data sets were continuous, normally distributed, with a linear relationship between both data sets. Therefore, Pearson's Product-Moment Correlation was applied by using SPSS Statistics version 25.

Results

Table-01. Descriptive statistics in terms of standard deviation (SD) and mean (M)

Variables	Mean	SD
Metacognitive Abilities	5.3	2.3
Knowledge of History	9.7	2.5
Comprehension in History	18.7	4.5
Academic Achievement in History	14.5	3.1

Table-01 indicated the values of means (M) and standard deviation (SD) representing the spread of each category.

Table-02. Pearson's Product-Moment Correlation among variables

Variables		N	r	Sig.
Knowledge level of cognitive domain	Metacognitive Abilities	31	.891	.000
Comprehension level of cognitive domain	Metacognitive Abilities	31	.755	.000
Academic Achievement in History	Metacognitive Abilities	31	.791	.000

The table indicates a correlation of metacognitive abilities with the first two levels of the cognitive domain (knowledge and comprehension), namely Comprehension in History. A Pearson product-moment correlation was run to determine the relationship between university students' metacognitive abilities and the Knowledge level of the

cognitive domain. There was a strong, positive correlation between university students' metacognitive abilities and Knowledge level of the cognitive domain, which was statistically significant (r = .891, n = 31, p = .000). Whereas a strong, positive correlation between university students' metacognitive abilities and comprehension level of the cognitive domain, which was statistically significant (r = .755, n = 31, p = .000).

Table-03. Values of Shared Variances among Variables

Variables	r	Shared Variance
Knowledge level of cognitive domain Metacognitive Abilities	.891	79.4 %
Comprehension level of cognitive domain Metacognitive Abilities	.755	56.6 %
Academic Achievement in History Metacognitive Abilities	.791	65.3 %

Table-03 represents the share of variance between the variables. A correlation of r =.891 was reported between the knowledge level of cognitive domain and metacognitive abilities, indicating that 79.4 % shared variance. Similarly, 56.6 % shared variance was observed among comprehension level of cognitive domain and metacognitive abilities. Furthermore, 71.4 % shared variance was observed among the application level of the cognitive domain and metacognitive abilities. Whereas 77.3 % shared variance was observed among comprehension in History and metacognitive abilities. All of the values of shared variances indicate that a large amount of variance was observed compared to most of the research conducted in the social sciences.

Discussion

The results of the study indicate that a strong correlation exists between the university students' metacognitive abilities and all levels of Comprehension in History. It revealed that university students having good metacognitive abilities achieved good results in terms of knowledge and comprehension levels of the cognitive domain called Comprehension in History. However, the presence of metacognitive abilities among university students showed the highest correlation with the knowledge level of the cognitive domain and lowest with the comprehension level of the cognitive domain. This helps to establish that university students may acquire or teach metacognitive abilities since university students may enhance their Comprehension in History with sub-dimensions knowledge and comprehension levels of the cognitive domain. This study corroborates the findings of Lara et al. (2020) that metacognitive abilities have a strong correlation with achievement scores. This study supported the findings of Strong et al. (2020) that metacognitive abilities enhance learning. The results of the study validated the findings of Veenman and van Cleef (2019) that metacognitive abilities figure out cognition.

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