How Socioeconomic Classes Influence Academic Grades of Elementary School Students? Defining Mediation Role of School Backgrounds and Cognitive Processing Strategies

Rafaquat Ali[*]
Irshad Hussain**
Sabiha Hameed Rahmani***

Abstract

This study was conducted to determine the significant role of socioeconomic class, public school background, and the cognitive processing strategies in students' achieved academic grades. The survey method was used, and 149 students of different socioeconomic classes provided the required information. These students differ in their public and non-public school backgrounds. The partial least squares SEM method was adopted to identify the strengths and significances of interrelationships between students' socioeconomic classes, school backgrounds, cognitive processing strategies and their academic grades. The Smart PLS 3 software assisted in testing different path hypotheses. The students' socioeconomic classes were found significantly related to their academic grades. The students' memorization cognitive processing strategies acted as a mediator, and these strategies effected the relationships between students' socioeconomic classes and their academic grades. Although, socioeconomic classes significantly predicted the use of deep strategies, memorization strategies, and students' pubic school backgrounds. However, students' public school backgrounds and their deep strategies were not appeared to play significant roles in their academic grades. The schools should opt student-centred teaching methods. These teaching methods can provide active learning experiences in classrooms. Examinations should not promote reproduction of knowledge, rather these should assess students' comprehension levels.

Keywords: Socioeconomic classes, Memorization strategies, Deep strategies, Academic grades, Pakistani private schools

Introduction

The examinations, students' personal characteristics, students' home and school environment are important aspects of the educational process. The examination process

[*]Assistant Professor, Department of Education, Bahawalnagar Campus, Bahawalnagar, The Islamia University of Bahawalpur, Pakistan, E-mail: rafaquatiub@yahoo.com.
[**]Professor, Department of Education, The Islamia University of Bahawalpur, Pakistan. Corresponding author Email: irshad.hussain@iub.edu.pk.
[***]Assistant Professor, Department of Education, The Islamia University of Bahawalpur.

evaluates aptness of students' learning achievements that consequence from their participation in educational activities at schools (Olatunji et al., 2016). Hence, the students' future choices for subjects to study and career decisions after completing a particular level of education depend on their performance in examinations (Dilnot, 2016; van der Berg & Shepherd, 2009). For these said reasons, students and teachers perpetually remain under worry for good grades, and most of the times they become limited to things, which are important from the examinational point of view, consequently, the students fail to pay considerations to some important aspects of teaching and learning (Schinske & Tanner, 2014). The desire to acquire high academic grades impacts differently to high achieving and low achieving struggling students; this academic grades or performance competition provides intrinsic motivation to high achieving students for the best possible performance, however, low achieving students who are extrinsically motivated become more stressed and anxious (Schinske & Tanner, 2014). However, the nature of examinations or assessments too, whether the formative or summative influence students' learning behaviours and their achievements in studies (Smith & Gorard, 2005).

In a category of personal factors, learning styles, cognitive styles, learning conceptions, epistemological beliefs, learning orientations, and cognitive processing strategies impact students' academic performance (Evans & Vermunt, 2013). Among the contextual factors, students' regulation of learning, teaching strategies and school environment etc. determine students' academic achievements (Vermunt & Vermetten, 2004). The socio-economic characteristics of the family, especially the mother and father education, parents' profession and family income have profound effects on students' academic performances (Gooding, 2001; Hoque et al., 2017; Jensen, 2009). Likewise, students' socioeconomic backgrounds are associated to types of schools they attend (Perry & Southwell, 2014), and behaviours they learn in schools (Hertel & Jude, 2016). In this way, the factors which might be of contextual, personal and socio-economic nature impact students' academic performances in examinations (Hijazi & Naqvi, 2006; Vermunt, 2005).

Generally, the socioeconomic class is known as a socio-economic variable that impacts students' quality of education and academic achievements (Thomson, 2018; Watermann et al., 2016). Typically, socioeconomic class or status consists of parents' professions, their educational backgrounds and the income of a family (Ash, 2004). Although, students of high socioeconomic classes perform better and they achieve higher academic grades than the students of low socioeconomic classes (Butler & Le, 2018; Puddey & Mercer, 2013), there are several factors that can act as the mediators for the relationships between students' socioeconomic classes and their academic performances (Farooq et al., 2011). The parents' capability to offer resources, which might be of cognitive, social or economic nature, for the education of their children depends on the socioeconomic classes they belong, and evidently, the parents of the

higher socioeconomic classes appear more resourceful than the parents of low socioeconomic classes to provide different resources to their children (Butler & Le, 2018; Fischer et al., 2019). Furthermore, the higher socioeconomic class parents' behaviour towards their children's education is more positive, and these parents pay more attention to school instructions, teacher-parent meetings and keep up their positive communication with school authorities and support and encourage their children to perform well in schools (Hertel & Jude, 2016). These parental behaviours associated with the parents of higher socioeconomic classes, once adopted by the parents of low socioeconomic classes, as well ended in better performance of their children in examinations (Elia, 2015).

In another approach, the parents manage the education of their children through selecting different schools for their education (Wrinkle et al., 1999). In a case, the parents of high socioeconomic classes are dissatisfied with the education provided in public schools, they choose non-public or private schools to ensure provision of quality education to their children (Institute of Social and Policy Sciences, 2010). However, the parents of low socioeconomic classes cannot afford to make such choices for the education of their children because of their financial constraints (Awan, 2015; Rahman, 2004). Beside the parents' income; there is the parents' education, which has appeared as a reason for the parents' choice of non-public or private schooling for their children (Awan, 2015). As well, it is observed that the students of low socioeconomic classes cannot perform on par with students of higher socioeconomic classes studying in the same school (Fernández Sanjurjo et al., 2018). It looks that the obvious reason for parents' choices of private schooling was the deteriorating quality of education in public schools. However, Wrinkle et al. (1999) nullified this assumption, and with the support of data, they revealed that the racial, economic and religious exclusions are the plausible causes for the rise of non-public schools.

Overall, there are positive effects on education because of the increase in non-public schools. The non-public school students' higher academic achievements have positively impacted the achievements of students in neighbouring public schools, and correspondingly, there is an increase in academic achievements of students in public schools (Dee, 1998; Hoxby, 1994). However, after we account the socioeconomic classes of students, the gap in quality of education between non-public and public schools decreases to minimum (PISA, 2011, 2018), and the claim to deliver high quality education by non-public schools becomes doubted. Dronkers and Robert (2003) evaluated the effectiveness and performances of public, non-public and government dependent non-public schools. They found independent non-public schools less effective as compared to public schools, when the type, number of students, their parental background and social composition were controlled.

Definitely, the students' personal features such as the nature of their cognitive processing strategies regulate their academic grades (Evans & Vermunt, 2013). The cognitive processing strategies actuate students' academic achievements because of their direct relationships to students' knowledge acquisition (Braun et al., 2012). The strategies such as information rehearsal, memorization, elaboration, relating, structuring and organizing information etc. are the common examples of different cognitive processing strategies (Vermunt, 1996; Weinstein et al., 2010). Typically, all cognitive processing strategies can be classed into memorization and deep strategies (Biggs et al., 2001). Memorization strategies such as rehearsal help to remember and recall information (Weinstein et al., 2010), whereas deep strategies encompass the more extensive and complex group of strategies such as restructuring information, applying information to different contexts and the creation of new knowledge (Entwistle, 2001; National Research Council, 2012). The students with extrinsic motivation, who seek to pass examinations, commonly go for memorization (Entwistle & Peterson, 2004b). On the other hand, the students with intrinsic motivation, self-interest, self-regulation, self-satisfaction and high self-efficacy use deep cognitive processing strategies (Entwistle & Peterson, 2004a; Vermunt, 2005).

Among different cognitive processing strategies, the memorization strategies are the basic and the simplistic set of strategies; the students memorize textbook information at different levels of education (Marton & Saljo, 2005). These strategies are negatively linked to learning achievements (Biggs, 1987a; Marton & Saljo, 2005) because these do not culminate to a thorough understanding of the information (Beattie et al., 1997; Marton & Saljo, 2005). Therefore, it is preferred for students to use deep cognitive processing strategies; for the reason that these strategies end in a thorough understanding of textbook information (Case & Gunstone, 2002). However, several factors regulate the use of deep strategies; for example, the nature of a learning assignment, type and nature of the anticipated assessment to assess the learning, and the age of students (Hattie & Donoghue, 2016). Nonetheless, there exist differences between western and Asian students in distinguished use of deep or memorization strategies (Biemans & Van Mil, 2008; Biggs, 1998). The western literature specifies that high achieving students use only deep strategies, whereas, Asian studies disclose that high achieving students use both memorization and deep strategies (Kember, 2000; Marton et al., 2005). On the other hand, congruent to western literature low achieving students simply use rehearsal and memorization strategies (Ferla et al., 2010).

Background of the Study

In Pakistani society, three types of schools; public, non-public and religious schools prepare students for three different standards of living (Malik, 2012). This study is limited only about the two types; public and non-public schools. The public schools serve low and lower middle income families, and these schools have the teacher

centered education system, annual examinations, and high dropout rates (Aziz et al., 2014; Siddiqui & Gorard, 2017). However, different types of non-public schools exist in Pakistan. The students from elite and ruling socioeconomic classes attend elite private schools, whereas parents of low middle and middle socioeconomic classes select low-budget non-public schools for their children because of their dissatisfaction from public schools (Rahman, 2004). It is established that teachers, curriculum, and examination system encourage Pakistani student to use memorization strategies in their studies (Safdar, 2013), and the use of memorization strategies is noticeable among Pakistani students at different levels of education (Aijaz, 2001; Ali & Abou, 2019; Ali et al., 2018; Aziz et al., 2014). However, the manner these variables impact the Pakistani students' learning outcomes and academic grades, is unknown and unexplored. Although, Farooq et al. (2011) revealed an impact of students' socioeconomic classes on their academic grades, there is little we know, how these indirectly affect students' academic grades in Pakistan?

The Problem and Hypotheses

The study was planned to establish a manner these different factors; students' socioeconomic classes, the type of schools, and cognitive processing strategies define students' academic grades. The study explored direct effects of students' socio-economic classes on their cognitive processing strategies, public school backgrounds and academic grades. With regard to indirect effects, we explored indirect effects of students' socioeconomic classes on their academic grades through their school backgrounds, use of memorization and deep strategies. These objectives were achieved by testing the following hypotheses:

1. Students' socioeconomic class is not significantly related to their academic grades.
2. Students' socioeconomic class is not significantly related to their public school background.
3. Students' socioeconomic class is not significantly related to their deep cognitive processing strategies.
4. Students' socioeconomic class is not significantly related to their memorization cognitive processing strategies.
5. Students' public school background is not significantly related to their academic grades.
6. Students' public school background is not significantly related their deep cognitive processing strategies.
7. Students' public school background is not significantly related to their memorization cognitive processing strategies.
8. Students' deep cognitive processing strategies are not significantly related to their academic grades.

9. Students' memorization cognitive processing strategies are not significantly related to their academic grades.
10. The indirect effect of socioeconomic class on students' academic grades is not significant.

Theoretical Framework

A range of social, economic and cognitive resources that parents can endow for their children education might be contingent upon their socioeconomic classes (Hartas, 2015; Hollingworth et al., 2011; Mcmaster, 2017). Therefore, the students' socioeconomic classes can assist to fathom variations in students' learning behaviours at schools (Butler & Le, 2018; Butler et al., 2018; Hertel & Jude, 2016; Smith & Barrett, 2011). The belief that the non-public schools provide the better learning environment, and non-public schools vow students' high academic achievements; this belief instigates parents of higher socioeconomic classes to choose these schools for their children (Aziz et al., 2014). If indeed the performance of students at non-public schools is better than the students of public schools, unquestionably, the non-public school students should have ideal or at least better learning behaviours than public school students. The different cognitive processing strategies associate with various ideal and non-ideal learning attributes (Biggs et al., 2001; Biggs, 1987b; Vercellone-Smith et al., 2012; Vermunt & Vermetten, 2004), accordingly, the cognitive processing strategies that non-public school students use can inform about their so-called better learning behaviours. One distinctive aspect of ideal learning behaviour is the use of deep cognitive processing strategies, because these strategies have relationships with comprehension of learning content and higher academic achievements, however, memorization strategies such as rehearsal are unsuitable because these strategies consequence in rote learning and limited understanding of the learning content (Biggs et al., 2001; Biggs, 1987b; Vercellone-Smith et al., 2012; Vermunt & Vermetten, 2004). However, Asian and Western culture bequeath different conceptions of learning (Biemans & Van Mil, 2008; Biggs, 1998), which produce dissimilar patterns to use cognitive processing strategies among Asian and Western students (Kember, 1996).

The Western culture endorses a clear differentiation between the poor performing students and high performing students. The poor performing students greatly use memorization, whereas, the high performing students use deep cognitive processing strategies (Vermunt & Verloop, 2000). In Asian culture, there prevail a dissonant situation; the high performing students use both memorization and deep strategies, while, the low performing students use only memorization strategies (Kember, 2000). Based on the above arguments, the Figure 1 states the theoretical background of the study. Theoretically, it appears plausible that the students' socioeconomic classes will affect their academic grades directly, and indirectly through effecting the students' choices of cognitive processing strategies and the schools they

study; non-public or public. As well, the theoretical stance indicates the conceivable effects of students' public or non-public school backgrounds on the use of strategies that can weaken or strengthen the indirect effects of socioeconomic classes on students' academic grades.

Research Method and the Population

The survey research use quantitative data collection rather than experimentation to explain trends in population to understand a situation or phenomenon (Creswell, 2012). Therefore, the cross-sectional survey design was deemed appropriate to understand the effects of students' socioeconomic classes, their public or non-public schooling on their cognitive processing strategies and academic grades. The population of the study involved only male students from different public and non-public schools who passed their elementary school examination (Year 8th examination). The convenient sampling technique (Howitt & Cramer, 2008) enabled researchers to select the sample from different public and non-public schools found in the Bahawalnagar city. The first author visited these schools, and collected the data from available students during these visits. One hundred and sixty questionnaires were handed out, and returned, however, after data screening, 149 questionnaires were found suitable for data analysis. The sample size was within the minimum suitable range to run structure equation modelling analysis through partial least squares method (Hair *et al.*, 2014; Wolf *et al.*, 2013; Wong, 2013) by using SmartPLS3 (Ringle *et al.*, 2015).

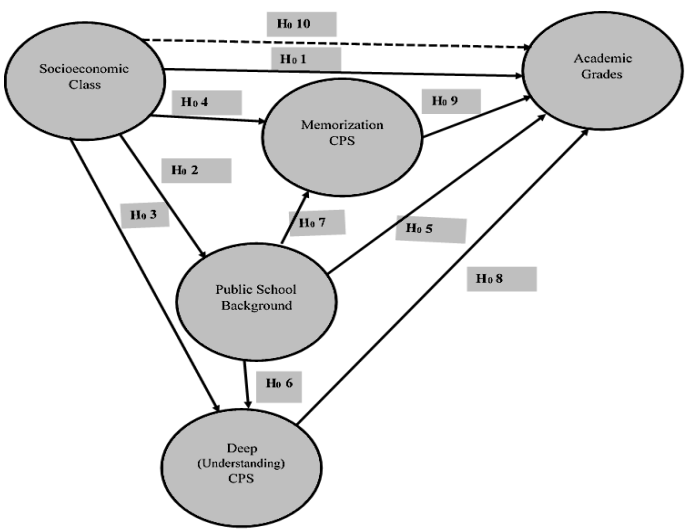

Figure 1. Theoretical Framework

Measurement of Variables

The hypothesized model in this study consisted five constructs. The two of these five constructs, namely memorization and deep (understanding) strategies, are the sub-constructs of the construct cognitive processing strategies. The items for the measurement of memorization and deep (understanding) strategies were adapted in Urdu language from the cognitive processing strategies section of the inventory of learning styles English version (Vermunt, 1994). The scoring of parents' profession and parents' education was according to the Kuppuswami revised measure of socioeconomic class index (Khairnar *et al.*, 2017). The mothers' education is critical in child education (Hartas, 2015), therefore, it was included in socioeconomic class index in this study. However, the parents' income was excluded from the index because the relative function of income in determination of socioeconomic class is dubious and criticized (Mishra & Singh, 2003). In sum, the socioeconomic class index was the sum of scores of parents' profession, father and mother education. In response to self-reported questions, the students provided information about their strategies, academic grades, socioeconomic classes, public and non-public school backgrounds.

Data Analysis

The structural equation modelling (SEM) is used in data analysis. It is because the SEM provides an opportunity to combine factor and path analysis to understand the phenomenon under study concurrently (Hair *et al.*, 2014). Among the two commonly used techniques in structural equation modelling; co-variance based SEM and partial least squares SEM (Wong, 2013), the partial least squares SEM is used in this study because the partial least squares SEM is comparatively robust to small sample sizes and normality issues of data (Hair *et al.*, 2019; Rodríguez *et al.*, 2015). The SmartPLS 3 software (Ringle *et al.*, 2015) is used to operate structural equation modelling in this study.

Results

The results section of the current study is divided into three sub-sections. The first sub-section provides the details and explanations of important issues linked to measurement of the constructs in this model. Whereas, the second sub-section covers the elucidation of the structural model and its associated parameters. Finally, the third sub-section debates about the proofs of the significance of different hypothesized paths.

Measurement Model

The Table 1 shows loadings or weights of different indicators or items to measure the constructs and sub-constructs unified in this model. The cognitive processing strategies entangle the measurement of the two sub-constructs: deep (understanding) cognitive processing strategies and memorization cognitive processing strategies. There are three items for the measurement of deep (understanding) strategies, and three items for the measurement of memorization strategies retained in this model.

These items were retained because the loadings on these items for relevant sub-constructs were significant and above 0.50 (Hair et al., 2014; Hair et al., 2019) These indicators/items bared an acceptable level of composite reliability (above the threshold value of 0.70) for the relevant sub-constructs (memorization and deep strategies), which confirmed that there are sufficient internal consistencies in these sub-constructs (Singh, 2016). The average variance extracted (AVE) specifies convergent validity, and the acceptable level of AVE is above 0.50 (Hair et al., 2014). The AVE values of memorization and deep (understanding) cognitive processing strategies were above the level of 0.50 (Table 1). It is obvious that measured sub-constructs of memorization and deep (understanding) strategies hold the acceptable levels of composite reliability and convergent validity (Table 1). The single indicator measures are used in this model for the measurements of academic grades, the type of schools (public or non-public school background), and socioeconomic classes.

Table 1
Measurement Model Results

Indicators	Loadings	Dimension	Composite Reliability	Average Variance Extracted (AVE)
Deep1	0.638***	Deep (Understanding)	0.802***	0.577***
Deep2	0.824***			
Deep3	0.803***			
Single Indictor		Academic grades	1.000	1.000
Memorize1	0.821***	Memorization	0.764***	0.522***
Memorize2	0.626***			
Memorize3	0.708***			
Single Indicator Background		Public School	1.000	1.000
Single Indicator Class		Socioeconomic	1.000	1.000

P< 0.001= ***

Customarily, the Fornell-Larcker criterion is applied to establish the discriminant validity of constructs (Henseler *et al.*, 2016). The Table 2 shows that the highlighted values (square root AVEs of constructs) are greater than their correlations with other constructs. This shows that these constructs and sub-constructs differ from each other to a considerable extent. Thus, the constructs and sub-constructs in this measurement model entail acceptable discriminant validity.

Table 2
Discriminant Validity

		1	2	3	4	5
1	Deep (Understanding)	0.760				
2	Academic grades	0.137	1.000			
3	Memorization	-0.028	-0.380	0.723		
4	Public School Background	-0.106	-0.095	0.056	1.000	
5	Socioeconomic Class	0.281	0.378	-0.354	-0.338	1.000

The statistics illustrated in Table 1 and Table 2 show item loadings, composite reliability, convergent validity and discriminant validity of constructs and sub-constructs in the measurement model. These statistics render this measurement model acceptable and appropriate to evaluate and test the different path hypotheses in the structural model.

Structural Model

In evaluation of the structural model, the first step is to scrutinize the variance inflation factor (VIF) for the constructs in the structural model. In our case, the inner VIF values are important for collinearity concerns. If two constructs are highly correlated, there exists collinearity (Hair *et al.,* 2014). A value of VIF between 3-5 cautions of collinearity concerns, however, the value of VIF below 3 is ideal (Hair *et al.,* 2019). In this model, VIF values for different constructs and sub-constructs displayed in the Table 3 are below 3. Hence, this model has no significant collinearity issues.

Table 3
Collinearity Statistics (VIF)

Inner VIF	Deep (Understanding)	Academic grades	Memorization	Public School Background	Socioeconomic Class
Deep (Understanding)		1.092			
Academic grades					
Memorization		1.157			
Public School Background	1.129	1.135	1.129		
Socioeconomic Class	1.128	1.397	1.128	1.000	

The next step in assessment of the structural model calls for the scrutiny of variance described by different factors/constructs in the model. The R-square denotes the variance in each endogenous construct because of the predictor constructs in the

structural model (Hair et al., 2019), therefore, the R-square implies the explanatory power of the structural model. The Table 4 accounts different R-square values for different endogenous constructs in the model. This model explains significantly 7.9 percent variance in students' deep (understanding) strategies, 21.5 percent variance in students' academic grades, 13 percent variance in use of memorization cognitive processing strategies among students, and 11.4 percent variance in their public school backgrounds. This explanation of variance for different endogenous constructs by their predictor constructs is significant (Table 4).

Table 4
Model Quality Criteria Results

Construct	R Square
Deep (Understanding)	0.079*
Academic grades	0.215***
Memorization	0.130*
Public School Background	0.114*

P< 0.001= ***, P< 0.01=**, P<0.05=*

Path Significance and Hypotheses Testing

The Table 5 displays the null-hypotheses of this study, associated path coefficients, T-values calculated, significance levels and the decisions about these hypotheses. Overall, the significant path relationships in this model reinforced the assumption that the students' socioeconomic classes are significantly related to their cognitive processing strategies. Furthermore, the students' memorization strategies significantly affect their academic grades, whereas their deep (understanding) strategies do not significantly affect their academic grades. The students' public or non-public school backgrounds appeared not to significantly influence either their cognitive processing strategies, nor their academic grades. It means that the role of public and non-public school background is not significant in supporting the students' different cognitive processing strategies. The variance in use of deep (understanding) and memorization cognitive processing strategies might be because of their socioeconomic classes rather than the function of their public and non-public school backgrounds. These results and decisions are discussed below:

Table 5
Path Coefficient Results

Null Hypothesis	Path Coefficient	T. Value	P. Value	Confidence Intervals 2.5%	97.5%	Decision
1. Students' socioeconomic class is not significantly related to their academic grades.	0.268	2.677	0.008	0.066	0.475	Rejected
2. Students' socioeconomic class is not significantly related to their public school background.	-0.338	4.282	0.000	-0.488	-0.182	Rejected
3. Students' socioeconomic class is not significantly related to their deep cognitive processing strategies.	0.276	3.798	0.000	0.135	0.426	Rejected
4. Students' socioeconomic class is not significantly related to their memorization cognitive processing strategies.	-0.379	4.450	0.000	-0.538	-0.229	Rejected
5. Students' public school background is not significantly related to their academic grades.	0.018	0.210	0.834	-0.132	0.201	Not Rejected
6. Students' public school background is not significantly related their deep cognitive processing strategies.	-0.013	0.145	0.885	-0.180	0.165	Not Rejected
7. Students' public school background is not significantly related to their memorization cognitive processing strategies.	-0.072	0.845	0.399	-0.238	0.101	Not Rejected
8. Students' deep cognitive processing strategies are not significantly related to their academic grades.	0.055	0.670	0.503	-0.089	0.237	Not Rejected
9. Students' memorization cognitive processing strategies are not significantly related to their academic grades.	-0.284	3.861	0.000	-0.421	-0.136	Rejected

Hypothesis 1: The hypothesized relationship path between students' socioeconomic class and their academic grades is significant. It is inferred that students' socioeconomic class has the significant direct effect on students' academic grades. **Hypothesis 2:** The path between students' socioeconomic class and their public school background is significant. It is supported that students' socioeconomic class is negatively related to their public school backgrounds. The probability of students' public school background decreases with an increase in their socioeconomic class. The students of higher socioeconomic classes have more chances to be from non-public educational institutions. **Hypothesis 3:** The hypothesized path between students' socioeconomic class and their deep (understanding) cognitive processing is significant.

It means that students of higher socioeconomic classes will have more likelihood to apply deep (understanding) strategies in their studies than the students of low socioeconomic classes. **Hypothesis 4:** The hypothesized path relationship between students' socioeconomic class and their memorization cognitive processing strategies is significant. However, this relationship is negative. It means that prospects to use memorization strategies decreases with an increase in students' socioeconomic class. There are more chances that students of low socioeconomic classes will memorize more than the students of high socioeconomic classes.

Hypothesis 5: The hypothesized path between students' public school background and their academic grades was weak and insignificant. It means that the students' public school or non-public school background does not play any significant role in their academic grades in Pakistan. **Hypothesis 6:** The null hypothesis about public school background and students' deep cognitive processing strategies was not rejected in this study. There was the insignificant negative relationship between students' public school backgrounds and their deep (understanding) strategies. It can be supposed that students' public school background insignificantly discourages the use of deep strategies among students. **Hypothesis 7:** The insignificant role of public school background is also evident in results related to the null hypothesis 'students' public school background is not significantly related to their memorization cognitive processing strategies'. There was the insignificant weak negative relationship between students' public school background and their memorization strategies. It means that the public school or non-public school background do not significantly encourage students to use memorization strategies.

Hypothesis 8: The path hypothesis 'students' deep cognitive processing strategies are not significantly related to their academic grades' was not rejected. There was a weak positive insignificant relationship. It means students' academic grades do not actually reflect their ability to understand and use deep cognitive processing strategies. **Hypothesis 9:** The hypothesized relationship between students' memorization cognitive processing strategies and their academic grades was significant but in the negative direction. The higher use of memorization is associated with the lower academic grades. The use of memorization strategies appears to play a significant negative role in students' academic success.

Hypothesis 10: There were different hypothesized indirect paths to show indirect effects of socioeconomic classes on students 'academic grades. However, the indirect paths hypothesized from socioeconomic classes to memorization strategies, and memorization strategies to academic grades were significant. The indirect path from socioeconomic class to public school background and public school background to academic grades do not end in indirect significant relationships because the path relationship from the public school background to academic grades was insignificant.

Likewise, the case is with the indirect paths from socioeconomic class to deep (understating) strategies, and from deep (understanding) strategies to students' academic grades. The path from socioeconomic class to deep (understanding strategies) was significant, but the path from deep (understanding) strategies to students' academic grades was insignificant. Only, the indirect paths from socioeconomic class to memorization and memorization strategies to students' academic grades were significant. Therefore, the Table 6 shows the results related to the null hypothesis, 'the indirect effect of socioeconomic class on students' academic grades is not significant". The mediation role of memorization in effecting the impact of students' socioeconomic class on their academic grades is significant and partial.

Table 6
Summary of Mediation Results

Hypothesis	Direct effect Socioeconomic class on Academic grades	Indirect Effect		Total Effect	VAF (Decision)
		Socioeconomic Class on Memorization	Memorization on Academic grades		
10. The indirect effect of socioeconomic class on students' academic grades is not significant.	0.268**	-0.379***	-0.284***	0.376	28.6 % (Partial Mediation)

P< 0.001= ***, P< 0.01=**, P<0.05=*

Discussion

This study illustrates the predictor role of students' socioeconomic classes in defining their cognitive processing strategies, their public or non-public school backgrounds, and their academic grades. Although, the students' socioeconomic classes significantly predicted their memorization and deep (understanding) strategies, however, the memorization strategies only significantly, but negatively affected students' academic grades. As well, the students' socioeconomic classes were significantly related to their public or non-public school backgrounds, but the students' public or non-public school backgrounds were not significantly connected with their cognitive processing strategies and academic grades.

In this study, the parental education and profession were counted as the students' socioeconomic class, consequently, the findings of this study avowed preceding findings about positive effects of father and mother education on their children's education (Bakar et al., 2017; Gooding, 2001; Shoukat et al., 2013). At an international level, the parents' average education is found to be positively related to

students' academic achievements at schools (Martins & Veiga, 2010). Although, the effects of parental education on children education are independent of the children age, the mother education seemed to play a major role at the early childhood stage, whereas, the father education becomes crucial in children' learning at adolescence (Erola et al., 2016). In certain circumstances, the school differences fail to explain variance in students' academic achievements, thereafter, the differences in the father and mother education can explain these differences (Alves et al., 2017). The parental education creates the differences in patterns of parental involvement in the child education; such as assisting reading at home, expectations for the children's education, communication between children and parents about school, and the parental encouragement and support for learning (Boonk et al., 2018). Previously, Saeed et al. (2005) used Pearson correlations and found weak relationships between father education, mother education, father occupation, mother occupation and social status to students' academic performances in Pakistan. However, the current study used advanced level analysis than they used. In Asian context, our study affirmed the findings of Li and Qiu (2018) who discovered the substantial impact of parents' socioeconomic classes on students' academic achievements.

The second constituent of socioeconomic class; the parents' profession and their employment status such as the farmer (land owner or peasant), government servant or private servant, and whether employed or unemployed affect students' academic performance (Arshad et al., 2012). The parents' stressful, demanding and harsh work experience jeopardises parents' positive relationships with their children at home (Heinrich, 2014). In this way, the parents induce their work experience to their home environment, which impacts students' learning behaviours (Stewart & Barling, 1996).

The parents of higher socioeconomic classes afford to choose schools for the education of their children. These parents believe non-public schools provide better schooling as compared to public schools, therefore, they select non-public schools for their children (Andrabi et al., 2002; National Center for Education Statistics, 1997). Whereas, this study disavows this general assumption, and indicates that low budget non-public schools and public schools in Pakistan do not significantly contribute different learning outcomes in students. The sample data illustrate that students of higher socioeconomic classes have less probability to have public school backgrounds in Pakistan. However, the students' public or non-public low budget school background does not lead to any difference in their academic grades or to their cognitive processing strategies. As well, the PISA (2011) study acknowledged insignificant differences in academic performances between similar socioeconomic class students of non-public and public schools. This study highlighted the standing debate about the quality of education in low-budget non-elite non-public schools in Pakistan (Institute of Social and Policy Sciences, 2010). Overall, the students have poor learning outcomes in both public and non-public non-elite private schools in Pakistan (Akmal, 2016). Therefore, it

is not the students' public and non-public school background, but it is their socioeconomic classes that have significant relationships with their academic grades and cognitive processing strategies.

This study found the significant but negative relationship between students' socioeconomic classes and their use of memorization strategies, and a positive relationship between their socioeconomic classes and their use of deep (understanding) strategies. This is because the parents of different socioeconomic classes provide different learning supportive environments to their children at homes (Boonk et al., 2018; Butler & Le, 2018). This study affirmed the previous study of Ali and Abou (2019) in Pakistan. However, this study specified that only the memorization strategies have the significant negative relationship with students' academic grades. It is confirmed that higher use of memorization strategies consequence in students' lower academic grades.

To a great extent, the reported associations are consistent with the literature available. For example, Albaili (1998) reported the negative relationship between students' grade point averages and the rehearsal (memorization) strategies. Likewise, Coertjens et al. (2013) described a small positive correlation between deep strategies and academic performance, and a small negative correlation between memorization strategies and academic performance. Surprisingly, Cano and Cardelle-Elawar (2008) discovered negative relationships of both the memorization and deep strategies with academic performance. The reasons for a more significant role of memorization strategies in effecting students' academic grades are teaching strategies at schools (Donche et al., 2013), and students' assessment expectations (Ferla et al., 2009). Therefore, the typical causes for the use of memorization strategies are teacher centred teaching strategies (Byrne et al., 2010), reproduction testing assessment conceptions (Ferla et al., 2009), and the terminal examination system (Byrne et al., 2010). In Pakistan, there exist the teacher centred education system (Malik, 2012), and terminal examinations (Malik et al., 2017) which encourage students to memorize the content and rote learn (Benz, 2012; Imami, 2015; Shahid, 2012).

Limitations of the Study

The sample size is not too large in this study, therefore, with a caveat the study results should be generalized. Furthermore, the income of parents was not included in the index of students' socioeconomic classes in this study, which limited the generalization of study results. Additionally, the population of the study were male students who have passed their elementary school level examination, subsequently, the results of the study cannot be generalized to higher secondary and university education and to female students.

Recommendations

The Pakistani public schools and non-public schools must provide their teachers the trainings, and resources to teach students through student centered approaches. The students' assessments should be formative beside their summative assessments. The tasks in these assessments should promote understanding of the content rather than to reproduce information. Moreover, teachers and students should be made aware of deep strategies so they can use these in their teaching and learning at schools. Because the students from low socioeconomic classes lack information resources at homes, therefore, they should be provided resources in schools to acquire deep understanding of the content.

References

Aijaz, S. M. (2001). *Learning Achievement in Primary Schools of Pakistam: A Quest for Quality Education*. Retrieved from http://unesdoc.unesco.org/images/0013/ 00 1358/ 13580 6eo.pdf.

Akmal, M. (2016). *The Achievement Gap Between Government and Private Schools in Pakistan.* (Master of Public Policy Masters Thesis), Georgetown University, Washington, DC. Retrieved from https://repository.library.georgetown.edu/ bitstream/ handle/ 10822/1040816/Akmal_georgetown_0076M_13244. pdf? sequence =1.

Albaili, M. A. (1998). Goal orientations, cognitive strategies and academic achievement among united arab emirates college students. *Educational Psychology, 18*(2), 195-203. doi:10.1080/0144341980180205.

Ali, R., & Abou, B. (2019). The Probability to Memorize and Understand Textbook Information: Socioeconomic Class as the Predictor for Cognitive Processing Strategies in Pakistani Education System. *Pakistan Journal of Social Sciences, 39*(1), 253 – 270. Retrieved from https://www.bzu.edu.pk/PJSS/Vol .%2038,% 20 No.%202,%202018/Vol.%2039,%20No.%201,%202019/PJSS-Vol39-No1, % 20 2019-21.pdf

Ali, R., Khurshid, K., Shahzad, A., Hussain, I., & Abu Bakar, Z. (2018). Nature of Conceptions of Learning in a Collectivistic Society: A Qualitative Case Study of Pakistan. *Eurasia Journal of Mathematics, Science and Technology Education, 14*(4), 1175-1187. doi:10.29333/ejmste/81867

Alves, A. F., Gomes, C. M. A., Martins, A., & Almeida, L. d. S. (2017). Cognitive performance and academic achievement: How do family and school converge? *European Journal of Education and Psychology, 10*(2), 49-56. doi:https://doi. org/10.1016/j.ejeps.2017.07.001

Andrabi, T., Das, J., & Khwaja, A. I. (2002). The Rise of Private Schooling in Pakistan: Catering to the Urban Elite or Educating the Rural Poor? In t. L. Project (Series Ed.). Retrieved from http://www.leapsproject.org/site/publications/

Arshad, M., Attari, Z. H., & Elahi, E. (2012). Impact of Parents' Profession on their Children's Learning English in Pakistan. *International Journal of Learning & Development, 2*(1), 426-437. Retrieved from http://citeseerx.ist.psu.edu/ view doc/ download? doi=10.1.1.685.5478&rep=rep1&type=pdf

Ash, S. (2004). Social Class. In K. Chambers, P. Trudgill, & N. Schilling- Estes (Eds.), *The Handbook of Language Variation and Change*: Blackwell Publishing Ltd.

Awan, A. G. (2015). Comparative Analysis of Public and Private Educational Institutions: A case study of District Vehari-Pakistan. *Journal of Education and Practice, 6*(16), 122-130. Retrieved from https://files.eric.ed.gov/fulltext/ EJ1079988.pdf

Aziz, M., Bloom, D. E., Humair, S., Jimenez, E., Rosenberg, L., & Sathar, Z. (2014). *Education System Reform in Pakistan: Why, When, and How?* Retrieved from Bonn, Germany: Retrieved from http://ftp.iza.org/pp76.pdf

Bakar, N. A., Mamat, I., & Ibrahim, M. (2017). Influence of Parental Education on Academic Performance of Secondary School Students in Kuala Terengganu. *International Journal of Academic Research in Business and Social Sciences, 7*(8), 296-304. Retrieved from http://hrmars.com/hrmars_papers/Influence_of_ Parental_Education_on_Academic_Performance_of_Secondary_School_Stude nts_in_Kuala_Terengganu.pdf

Beattie, V., Collins, B., & McInnes, B. (1997). Deep and surface learning: a simple or simplistic dichotomy? *Accounting Education, 6*(1), 1-12. doi:10.1080/096392 897 331587

Benz, A. (2012). The Crisis of School Education in Pakistan Of Government's Failure and New Hopes in the Growing Private Education Sector. *Internationales Asienforum, 43*(3-4), 223–244. Retrieved from : https://crossasia-journals.ub. uni- heidel berg.de/index. php/iaf/article/download/186/181

Biemans, H., & Van Mil, M. (2008). Learning Styles of Chinese and Dutch Students Compared within the Context of Dutch Higher Education in Life Sciences. *The Journal of Agricultural Education and Extension, 14*(3), 265-278. doi:10.1080/ 13892 240802 207700

Biggs, J. (1998). Learning from the Confucian heritage: so size doesn't matter? *International Journal of Educational Research, 29*(8), 723-738. doi:http://dx. doi. org /10. 1016/ S0883-0355(98)00060-3.

Biggs, J., Kember, D., & Leung, D. Y. P. (2001). The revised two-factor study process questionnaire: R-SPQ-2F. *British Journal of Educational Psychology, 71*, 133-133.Retrieved from http://search.proquest.com/docview/216968203? Accountid = 41678

Biggs, J. B. (1987a). *Student Approaches to Learning and Studying, Resaerch Monograph*. Hawthorn: Australian Council of Educational Research: Retrieved from http://files.eric.ed.gov/fulltext/ED308201.pdf.

Biggs, J. B. (1987b). *Study Process Questionnaire Manual. Student Approaches to Learning and Studying*. Hawthorn: Australian Council For Educational Research: Retrieved from http://files.eric.ed.gov/fulltext/ED308200.pdf.

Boonk, L., Gijselaers, H. J. M., Ritzen, H., & Brand-Gruwel, S. (2018). A review of the relationship between parental involvement indicators and academic achievement. *Educational Research Review, 24*, 10-30. doi:https://doi.org/ 10.1016/ j.edurev. 2018.02.001

Braun, I., Gurlitt, J., & Nückles, M. (2012). Cognitive and Affective Learning Strategies. In N. M. Seel (Ed.), *Encyclopedia of the Sciences of Learning* (pp. 563-566). Boston, MA: Springer US.

Butler, Y. G., & Le, V.-N. (2018). A longitudinal investigation of parental social-economic status (SES) and young students' learning of English as a foreign language. *System, 73*, 4-15. doi:https://doi.org/10.1016/j.system.2017.07.005

Butler, Y. G., Sayer, P., & Huang, B. (2018). Introduction: Social class/socioeconomic status and young learners of English as a global language. *System, 73*, 1-3. doi:https://doi.org/10.1016/j.system.2018.02.007

Byrne, M., Finlayson, O., Flood, B., Lyons, O., & Willis, P. (2010). A comparison of the learning approaches of accounting and science students at an Irish university. *Journal of Further and Higher Education, 34*(3), 369-383. doi:10.1080/0309877x.2010.484055

Cano, F., & Cardelle-Elawar, M. (2008). Family Environment, Epistemological Beliefs, Learning Strategies, and Academic Performance: A Path Analysis. In M. Khine (Ed.), *Knowing, Knowledge and Beliefs* (pp. 219-239): Springer Netherlands.

Case, J., & Gunstone, R. (2002). Metacognitive Development as a Shift in Approach to Learning: An in-depth study. *Studies in Higher Education, 27*(4), 459-470. doi:10.1080/0307507022000011561

Coertjens, L., Donche, V., De Maeyer, S., Vanthournout, G., & Van Petegem, P. (2013). Modeling Change in Learning Strategies throughout Higher Education: A Multi-Indicator Latent Growth Perspective. *PLoS ONE, 8*(7), e67854. doi:doi:10.1371/journal.pone.0067854

Creswell, J., W. . (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (P. A. Smith Ed. 4 ed.). Boston: Pearson Education, Inc.

Dee, T. S. (1998). Competition and the quality of public schools. *Economics of Education Review, 17*(4), 419-427. doi:https://doi.org/10.1016/S0272-7757(97)00040-X

Dilnot, C. (2016). How does the choice of A-level subjects vary with students' socio-economic status in English state schools? *British Educational Research Journal, 42*(6), 1081-1106. doi:10.1002/berj.3250

Donche, V., De Maeyer, S., Coertjens, L., Van Daal, T., & Van Petegem, P. (2013). Differential use of learning strategies in first-year higher education: The impact of personality, academic motivation, and teaching strategies. *British Journal of Educational Psychology, 83*(2), 238-251. doi:10.1111/bjep.12016

Dronkers, J., & Robert, P. (2003). *The effectiveness of public and private schools from comparative perspective* Retrieved from : http://cadmus.eui.eu/bitstream/id/1505/sps2003-13.pdf/

Elia, M. S. (2015). *Parenting Practices of Lower Socioeconomic Status Parents of High Achieving Students.* (Doctor of Education), Walden University. Retrieved from https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=1576&context=dissertations

Entwistle, N. (2001). Styles of Learning and Approaches to Studying in Higher Education. *Kybernetes, 30*(5), 593-603. doi:10.1108/03684920110391823

Entwistle, N., & Peterson, E. (2004). Learning Styles and Approaches to Studying. In C. D. Spielberger (Ed.), *Encyclopedia of Applied Psychology* (pp. 537-542). New York: Elsevier.

Entwistle, N. J., & Peterson, E. R. (2004). Conceptions of learning and knowledge in higher education: Relationships with study behaviour and influences of learning environments. *International Journal of Educational Research, 41*(6), 407-428. doi:http://dx.doi.org/10.1016/j.ijer.2005.08.009

Erola, J., Jalonen, S., & Lehti, H. (2016). Parental education, class and income over early life course and children's achievement. *Research in Social Stratification and Mobility, 44*, 33-43. doi:https://doi.org/10.1016/j.rssm.2016.01.003

Evans, C., & Vermunt, J. D. (2013). Styles, approaches, and patterns in student learning. *British Journal of Educational Psychology, 83*(2), 185-195. doi:10.11 11/b jep.12017

Farooq, M. S., Chaudhry, A. H., Shafiq, M., & Berhanu, G. (2011). Factors Affecting Students' Quality of Academic Performance: A Case of Secondary School Level. *Journal of Quality and Technology Management, 7*(2), 01-14. Retrieved from : http://pu.edu.pk/images/journal/iqtm/PDF-FILES/01-Factor.pdf

Ferla, J., Valcke, M., & Schuyten, G. (2009). Student models of learning and their impact on study strategies. *Studies in Higher Education, 34*(2), 185-202. doi:10.1080/03075070802528288

Ferla, J., Valcke, M., & Schuyten, G. (2010). Judgments of self-perceived academic competence and their differential impact on students' achievement motivation, learning approach, and academic performance. *European Journal of Psychology of Education, 25*(4), 519-536. doi:10.1007/s10212-010-0030-9

Fernández Sanjurjo, J., Arias Blanco, J. M., & Fernández-Costales, A. (2018). Assessing the influence of socio-economic status on students' performance in Content and Language Integrated Learning. *System, 73*, 16-26. doi:https://doi. org/ 10.1016/ j.system.2017.09.001

Fischer, S., Barnes, R. K., & Kilpatrick, S. (2019). Equipping parents to support their children's higher education aspirations: a design and evaluation tool. *Educational Review, 71*(2), 198-217. doi:10.1080/00131911.2017.1379472

Gooding, Y. (2001). *The relationship between parental educational level and academic success of college freshmen.* (PhD), Iowa State University, Iowa. Retrieved from https://lib.dr.iastate.edu/cgi/viewcontent.cgi?article=1428&context=rtd

Hair, J., F., Hult, G., Tomas, M., Ringle, C., M., & Sarstedt, M. (2014). *Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM).* California, USA: SAGE Publications, Inc.

Hair, J. F., Risher, J. J., Sarstedt, M., & Christian M. Ringle. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 31*(1), pp.2-24. doi:https://doi.org/10.1108/EBR-11-2018-0203

Hartas, D. (2015). Parenting for social mobility? Home learning, parental warmth, class and educational outcomes. *Journal of Education Policy, 30*(1), 21-38. doi:10.1080/02680939.2014.893016

Hattie, J. A. C., & Donoghue, G. M. (2016). Learning strategies: a synthesis and conceptual model. *Npj Science Of Learning, 1*, 16013. doi:10.1038/npjscilearn. 2016.13

Heinrich, C. J. (2014). Parents' Employment and Children's Wellbeing. *The Future of Children, 24*(1), 121-146. Retrieved from http://www.jstor.org/stable/ 23723 386

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research:updated guidelines. *Industrial Management & Data Systems, 116*(1), 2-10. doi: 10.1108/IMDS-09-2015-0382

Hertel, S., & Jude, N. (2016). Parental Support and Involvement in School. In S. Kuger, E. Klieme, N. Jude, & D. Kaplan (Eds.), *Assessing Contexts of Learning: An International Perspective* (pp. 210-225). Cham: Springer International Publishing Ag.

Hijazi, S. T., & Naqvi, S. M. M. R. (2006). Factors Affecting Students' Performance: A Case of Private Colleges *Bangladesh e-Journal of Sociology, 3*(1). Retrieved from https://pdfs.semanticscholar.org/cf09/8d90f8884a8950e3b9ba7c63ae2d59cfeb32.pdf

Hollingworth, S., Mansaray, A., Allen, K., & Rose, A. (2011). Parents' perspectives on technology and children's learning in the home: social class and the role of the habitus. *Journal of Computer Assisted Learning, 27*(4), 347-360. doi:10.1111/j.1365-2729.2011.00431.x

Hoque, M. M., Khanam, S. T., & Nur Nobi, M. (2017). The Effects of Mothers' Profession on their Children's Academic Performance: An Econometric Analysis. *Global Journal of HUMAN-SOCIAL SCIENCE: E Economics, 17*(2). Retrieved from https://www.researchgate.net/publication/320068129_The_Effects_of_Mothers'_Profession_on_their_Children's_Academic_Performance_An_Econometric_Analysis_The_Effects_of_Mothers'_Profession_on_their_Children's_Academic_Performance_An_Econometric_Analysis

Howitt, D., & Cramer, D. (2008). *Introduction to Research Methods in Psychology* (2nd ed.). England: Pearson Education Limited.

Hoxby, C. M. (1994). *Do private schools provide competition for public schools* Retrieved from https://www.nber.org/papers/w4978.pdf

Imami, A. S. (2015, 08th September 2015). Rote learning: The fault in our schools, Blogg. *The Nation E-Paper (Blogger Section)*. Retrieved from https://nation.com.pk/08-Sep-2015/rote-learning-the-fault-in-our-schools

Institute of Social and Policy Sciences. (2010). *Private Sector Education in Pakistan: Mapping and Musing*. Retrieved from Islamabad: Retrieved from www.i-saps.org

Jensen, E. (2009). How Poverty Affects Behavior and Academic Performance *Teaching with poverty in mind : what being poor does to kids' brains and what schools can do about it* (pp. 13-45). Alexandria, VA: ASCD publications.

Kember, D. (1996). The intention to both memorise and understand: Another approach to learning? *Higher Education, 31*(3), 341-354. doi:10.1007/bf00128436

Kember, D. (2000). Misconceptions about the learning approaches, motivation and study practices of Asian students. *Higher Education, 40*(1), 99-121. doi:10.1023/a:1004036826490

Khairnar, M. R., Wadgave, U., & Shimpi, P. V. (2017). Kuppuswamy's Socio-Economic Status Scale: A Revision of Occupation and Income Criteria for 2016. *The Indian Journal of Pediatrics, 84*(1), 3-6. doi:10.1007/s12098-016-2223-y

Li, Z., & Qiu, Z. (2018). How does family background affect children's educational achievement? Evidence from Contemporary China. *The Journal of Chinese Sociology, 5*(1), 13. doi:10.1186/s40711-018-0083-8

Malik, A. H. (2012). *A Comparative Study of Elite-English-Medium Schools, Public Schools, and Islamic Madaris in Contemporary Pakistan: The Use of Pierre Bourdieu's Theory to Understand "Inequalities in Educational and Occupational Opportunities"*. (Ed.D. Thesis), University of Toronto, Canada. Retrieved from https://vpn.utm.my/docview/1349629172?accountid=41678 ProQuest Dissertations & Theses Full Text database. (NR97041)

Malik, I. A., Sarwar, M., & Imran, A. (2017). *Quality and Standardization: A Twin-Dilemma of Public Examinations at Higher Secondary School Level in Pakistan*. Retrieved from https://www.fbise.edu.pk/Downloads/QUALITY%20AND%20STANDARDIZATION.pdf

Martins, L., & Veiga, P. (2010). Do inequalities in parents' education play an important role in PISA students' mathematics achievement test score disparities? *Economics of Education Review, 29*(6), 1016-1033. doi:https://doi.org/10.1016/j.econedurev.2010.05.001

Marton, F., & Saljo, R. (2005). Approaches to Learning. In F. Marton, Hounsell, D. & N. Entwistle (Eds.), *The Experience of Learning: Implications for teaching and studying in higher education.* (Vol. 3rd (Internet) edition, pp. 39-58). Edinburgh: University of Edinburgh, Centre for Teaching, Learning and Assessment.

Marton, F., Wen, Q., & Wong, K. (2005). 'Read a hundred times and the meaning will appear' Changes in Chinese University students' views of the temporal structure of learning. *Higher Education, 49*(3), 291-318. doi:10.1007/s10734-004-6667-z

Mcmaster, N. C. (2017). Who studies STEM subjects at A level and degree in England? An investigation into the intersections between students' family background, gender and ethnicity in determining choice. *British Educational Research Journal, 43*(3), 528-553. doi:DOI: 10.1002/berj.3270

Mishra, D., & Singh, H. P. (2003). Kuppuswamy's socioeconomic status scale — A revision. *The Indian Journal of Pediatrics, 70*(3), 273-274. doi:10.1007/BF02 725598

National Center for Education Statistics. (1997). *Public and Private Schools: How they Differ*. NCES 97-983: Washington: New Jersey; U.S. Department of Education

National Research Council. (2012). Perspective on Deeper Learning. In J. W. Pellegrino & M. L. Hilton (Eds.), *Education for Life and Work: Developing Transferable Knowledge and Skills in the 21st Century. Committee on Defining Deeper Learning and 21st Century Skills,* (pp. 69-99). Washington, DC:: The National Academies Press.

Olatunji, S. O., Aghimien, D. O., Oke, A. E., & Olushola, E. (2016). Factors Affecting Performance of Undergraduate Students in Construction Related Disciplines. *Journal of Education and Practice, 7*(13), 55-62. Retrieved from https://files.eric.ed.gov/fulltext/EJ1102825.pdf

Perry, L. B., & Southwell, L. (2014). Access to academic curriculum in Australian secondary schools: a case study of a highly marketised education system. *Journal of Education Policy, 29*(4), 467-485. doi:10.1080/02680939. 2013.846414

PISA. (2011). *Private schools: Who benefits?* Retrieved from https://www.oecd.org/ pisa/ pisa products/ pisainfocus/48482894.pdf

PISA. (2018). *PISA 2015 Results in Focus*. Retrieved from https://www.oecd.org/pisa/ pisa-2015- results-in-focus.pdf

Puddey, I. B., & Mercer, A. (2013). Socio-economic predictors of performance in the Undergraduate Medicine and Health Sciences Admission Test (UMAT). *BMC Medical Education, 13*, 15. doi:10.1186/1472-6920-13-155

Rahman, T. (2004). Denizens of alien worlds: A survey of students and teachers at Pakistan's Urdu and English language-medium schools, and madrassas. *Contemporary South Asia, 13*(3), 307-326. doi:10.1080/0958493042000272212

Ringle, C. M., Wende, S., & Becker, J.-M. (2015). SmartPLS: Boenningstedt: SmartPLS GmbH,. http://www.smartpls.com

Rodríguez, A. L. L., Ortega-Gutiérrez, J., & Roldán, J. L. (2015). *Linking market orientation, innovation, unlearning and performance : A multiple mediation model*. Paper presented at the 2nd International Symposium on Partial Least Squares Path Modeling, Seville, Spain. https://pdfs.semanticscholar.org/15b7/ 12f59 b11e73dc88f1dc4334bc37681ec4862.pdf

Saeed, M., Gondal, M. B., & Bushra. (2005). Assessing achievement of primary grader students and factors affecting achievement in Pakistan. *International Journal of Educational Management, 19*(6), 486-499. doi:10.1108/09513540510617436

Safdar, M. (2013). Meaningful Learning and Rote Learning in Physics: A Comparative Study in City Jhelum (Pakistan). *Middle Eastern & African Journal of Educational Research*(6), 60-77. Retrieved from https://pdfs.semantic scholar.org/ 6 c42/7c15464 7741673a53b49da628ade295b5f21.pdf?_ ga=2.15 95 72 733. 138109 9173.1563788193-34609591.1563272579

Schinske, J., & Tanner, K. (2014). Teaching More by Grading Less (or Differently). *CBE—Life Sciences Education, 13*(Summer 2014), 159-166. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4041495/pdf/159.pdf

Shahid, U. (2012, Published online June 29, 2012). Why rote learning (unfortunately) works for Pakistan. *The Express Tribune (Blog)*. Retrieved from https://blogs.tribune.com.pk/story/12351/why-rote-learning-unfortunately-works-for-pakistan/

Shoukat, A., Ilyas, M., Azam, R., & Ch, A. H. (2013). Impact of Parents' Education on Children's Academic Performance. *Secondary Education Journal, 2*(1), 53-59. Retrieved from http://pu.edu.pk/images/journal/secondary/PDF/4_Aqsa%20&%20Maryam_v2 _issue1.pdf

Siddiqui, N., & Gorard, S. (2017). Comparing government and private schools in Pakistan: The way forward for universal education. *International Journal of Educational Research, 82*, 159-169. doi:https://doi.org/10.1016/j.ijer. 2017.01.007

Singh, J. (2016). *Acceptance of technology enhanced learning a study among technical students in India.* (Fellow Programme in Management (Industry)), Indian Institute of Management Indore, Indore. Retrieved from https://shodhganga. inflibnet. ac.in/bitstream/10603/ 88959/14/14_chapter%206.pdf

Smith, E., & Gorard, S. (2005). 'They don't give us our marks': the role of formative feedback in student progress. *Assessment in Education, 12*(1), 21-38. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi= 10.1.1.470.1117 &rep=rep1&type=pdf

Smith, M., & Barrett, A. M. (2011). Capabilities for learning to read: An investigation of social and economic effects for Grade 6 learners in Southern and East Africa. *International Journal of Educational Development, 31*(1), 23-36. doi:10.1016/j.ijedudev.2010.06.006

Stewart, W., & Barling, J. (1996). Fathers' Work experience Effect Children' Behaviors via Job Related Effect and Parenting Behavior. *Journal of Organizational Behavior, 17*, 221-232. Retrieved from https://hosted.smith.queensu.ca/faculty /jbarling/ Articles/1996%20Stewart%20Barling%202.pdf

Thomson, S. (2018). Achievement at school and socioeconomic background—an educational perspective. *Npj Science Of Learning, 3*(1), 5. doi:10.1038/s41539-018-0022-0

van der Berg, S., & Shepherd, D. (2009). *Signalling performance: An analysis of continuous assessment and matriculation examination marks in South African schools1*. Retrieved from https://www.umalusi.org.za/docs/research/2009/ signaling performance.pdf

Vercellone-Smith, P., Jablokow, K., & Friedel, C. (2012). Characterizing communication networks in a web-based classroom: Cognitive styles and linguistic behavior of self-organizing groups in online discussions. *Computers & Education, 59*(2), 222-235. doi:10.1016/j.compedu.2012.01.006

Vermunt, J. D. (1994). *Inventory of learning styles in higher education: scoring key for the inventory of learning styles in higher education*. Tilburg, Netherlands: Department of Educational Psychology, Tilburg University

Vermunt, J. D. (1996). Metacognitive, cognitive and affective aspects of learning styles and strategies: A phenomenographic analysis. *Higher Education, 31*(1), 25-50. doi:10.1007/bf00129106

Vermunt, J. D. (2005). Relations between student learning patterns and personal and contextual factors and academic performance. *Higher Education, 49*(3), 205-234. doi:10.1007/s10734-004-6664-2

Vermunt, J. D., & Verloop, N. (2000). Dissonance in Students' Regulation of Learning Processes. *European Journal of Psychology of Education, 15*(1), 75-87. doi:http://dx.doi.org/10.1007/BF03173168

Vermunt, J. D., & Vermetten, Y. (2004). Patterns in Student Learning: Relationships Between Learning Strategies, Conceptions of Learning, and Learning Orientations. *Educational Psychology Review, 16*(4), 359-384. doi:10.1007/s 10648 -004 -0005-y

Watermann, R., Maaz, K., Bayer, S., & Roczen, N. (2016). Social Background. In S. Kuger, E. Klieme, N. Jude, & D. Kaplan (Eds.), *Assessing Contexts of Learning: An International Perspective* (pp. 117-145). Cham: Springer International Publishing Ag.

Weinstein, C. E., Jung, J., & Acee, T. W. (2010). Learning Strategies. In P. Penelope, B. Eva, & M. Barry (Eds.), *International Encyclopedia Of Education* (Third ed., Vol. 5, pp. 323-329). Oxford: Academic Press: Elsevier.

Wolf, E., Harrington, K., lark, S., & Miller, M. (2013). Sample Size Requirements for Structural Equation Models: An Evaluation of Power, Bias, and Solution Propriety. *Educ Psychol Meas, 76*(6), 913-934. doi:10.1177/001316441349 5237

Wong, K. K.-K. (2013). Partial Least Squares Structural Equation Modeling (PLS-SEM) Techniques Using SmartPLS. *Marketing Bulletin, 24*, 1-32. Retrieved from http://marketing-bulletin.massey.ac.nz

Wrinkle, R. D., Stewart, J., & Polinard, J. L. (1999). Public School Quality, Private Schools, and Race. *American Journal of Political Science, 43*(4), 1248-1253. doi:10.2307/2991826