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LEARNING PATTERNS AND ACADEMIC ENGAGEMENT OF KUWAITI UNDERGRADUATES

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Abstract

This study was aimed to analyze the relationship between learning patterns, academic engagement, and GPA. The participants were 81 undergraduates from a private Engineering and Business College in Kuwait who were asked to complete the Inventory of Learning Styles (ILS) and Student Engagement Inventory- College Version (SEI-C). The data were analyzed via correlation analysis, using SPSS statistical package. The results showed that student's learning patterns were associated with student's type of engagement to learn. In this respect, the Teacher-Student Relationship (TSR) was positively related to Meaning- and Reproduction-Directed pattern. Control and Relevance of Schoolwork (CRS) and Future Goals (FGA) were related to all patterns, except for the Undirected pattern (UD). Conversely, UD, and RD pattern were related to Peer Support (PSL). Finally, the GPA was related to the Application-Directed pattern, only. Furthermore, the results from a cultural perspective are discussed.

Keywords

College, Academic Engagement, Learning Patterns, Student Learning, GPA

1. Introduction

In this age of globalization, education has come to play a crucial role in developing the human capital in making a better living (Battle & Lewis, 2002). Said so, there is an increasing number of youngsters who pursue their studies through college or/and university. Such phenomena

are notable in Kuwait for which one of the main reasons is the full scholarship and many other facilities that the state provides for the youth of the country. Despite the 9.3% increase of youngsters who continue their studies in higher education 2016-2017, (Ministry of Higher Education) there is a discrepancy between the number of students enrolled and of those graduated each year. Kuwaiti college students spend approximately 2.7 academic years in a 2-year college program before their graduation. An important deriving issue to this is that of low academic engagement.

Although learning styles and academic engagement are pivotal concepts when it comes to academic achievement and graduation, there are very few studies on education issues in Kuwait. For that reason, this study aims to analyze the relationship between the learning patterns, academic engagement, and GPA in a sample of college students in a large private university in Kuwait.

1.1. Learning Patterns

In contemporary educational studies, learning patterns refer as whole to the learning activities that students approach, learning orientation, and their mental model of learning (Cassidy, 2010). Said so, learning pattern is a concept which puts together cognitive, affective, and regulative processes of learning, which are combined with cognitive models of learning and learning orientations. The mental model of learning refers to metacognition aspects such as student's conception of learning (Flavell, 1987). Learning orientations refer to student's personal goals, intentions, and his concerns about his studies. Learning strategies refer to activities that a student uses to learn (Vermunt, 1996). Until about three decades ago, most of the research about students' learning was focused on cognitive strategies leaving behind the situational factors of learning. The value of Vermunt' approach is that he didn't see learning styles as personality-related tendencies of learning, but as an interplay of personal and contextual factors which are combined during the studying period. To make it less personality-related, Vermunt (2004) used instead of learning "style" the term of learning "pattern." After a series of studies among university students, four learning patterns were identified: reproduction directed, undirected, meaning directed, and application directed (Vermunt and Vermetten, 2004; Vermunt, 2005).

Firstly, the *undirected pattern* of learning refers to having difficulties with processing the information, selecting the important information among the less important one, lack of regulation and hanging learning more on peers and other external factors, and having unclear perceptions about their intentions, skills, and choices. Secondly, *the pattern of reproduction directed* refers to that pattern where students use a series of distinct stages to learn, are regulated by external forces

to learn and see themselves as test-oriented. Thirdly, the pattern of *meaning directed* refers to a deep processing strategy that goes along with high-self regulation and a conception of learning as self-construction of knowledge, and personal interest in the subject. Fourthly, the pattern of *application directed* refers to that pattern where students use concrete processing of the information, are both internally and externally motivated to learn and consider knowledge as being important for concrete learning.

If it is needed to choose a pattern which can better lead to higher academic performance, it should be done using contextual and student's perspective. The patterns of application and meaning directed are believed to ensure appropriate learning for university studies. Meanwhile, reproductive learning cannot be out of importance when it comes to acquiring basic factual knowledge.

1.2. Student Engagement

Student engagement is a focal concept related to student academic performance, which leads to graduation. Different studies have shown that there are enormous benefits of high participation in schoolwork. The benefits of graduation are both individual and societal. Individuals who get a degree have higher chances to be employed with a higher salary and with more opportunities to have a decent life. Even more, individuals who graduate from college are likely to live longer (Cutler & Lleras-Muney, 2007), and have a higher life satisfaction (Khaneman & Deaton, 2010). There is an open discussion on defining student engagement and finding the appropriate measurements for a productive engagement (Sinatra, Heddy and Lombardi, 2015). School engagement has been characterized as a multidimensional construct with behavioral, emotional, and cognitive dimensions (Fredricks et al., 2004). According to this perspective, behavioral engagement includes activities such as attendance and participation in school activities. Emotional engagement consists of a sense of belonging to or appreciating of the school. Cognitive engagement is a willingness to engage in effortful tasks, purposiveness, approach use, and self-regulation.

Academic engagement means to be active, and at the same time, to have a sense of feeling and making (Harper and Quaye, 2009). Bomia and et al. (1997) define student engagement as a student' willingness, needs, desire, motivation, and success in the learning process. Hu and Kuh (2001) describe student engagement as the time and the quality used by students on educational activities in order to achieve the desired outcomes. Furthermore, student engagement includes also their willingness to take part in activities (Stovall, 2003).

There are different measurement models of student engagement like two-dimensional models consisting of behavior and emotion (Finn, 1989; Newmann, Whelage, & Lamborn, 1992), three-dimensional models consisting of behavioral, cognitive and affective aspects (Archambault, 2009; Wigfield et al., 2008), and four-dimensional models which include academic, behavioral, cognitive and psychological engagement (Appelton, Christenson, Kim, & Reschley, 2006). It is evident that all of these models emphases that academic engagement is a multidimensional concept.

Although many studies are trying to understand the dimensions and factors of student engagement and learning patterns, there is limited research directly investigating the relationship between the above mentioned. Furthermore, there is a vast gap of research about student engagement and learning pattern in an Arabic country like Kuwait. Therefore, this study aims to examine the relationship between student learning patterns, academic engagement, and GPA among Kuwaiti undergraduate students. This study is considered necessary because of the presence of the very few similar research for Kuwait educational context. Besides, this study will examine the influence of cultural factors on student engagement and learning patterns.

This study answers to the following research question:

What is the relationship between learning patterns, academic engagement, and GPA among college students?

2. Methodology

The English short version of ILP conducted among 81 undergraduate students in a private college in Kuwait. The original version of the inventory was used. There was no need for modifications since the students involved in the study conduct their studies in English. The SEI-C five-factor model conducted among the same students one week later they answered the ILP inventory.

2.1. Data Collection and Participants

The data for this study were collected during fall term 2018-2019 at a large private university-college in Kuwait. A total of 81 college students (N=81) got selected as a sample in this study. The sample included students from five different majors of the College of Engineering and Business Administration, respectively; Business-Administration, Human Resources Management, Mechanical-Electrical Engineering, Information-Communications Technology, and Computer Engineering. The participants who were undergraduates enrolled in the elective course of

psychology were both males (n=25), and females (n=56), and the average age was 20.85 years old. The demographic data was collected directly from participants.

Meanwhile, the data about participants' major and GPA were collected from the online registration system of the university using the student' identification number provided during the paper-pencil administration of both instruments, SEI-C and ILP. To ensure accurate data, ILP was administrated first, and the SEI_C a week later to that. Then, instruments holding the same student' identification number, were paired to collect the data for the study. The sample size of the original data set was 96 students. The total number of participants included in the final data was reduced by 8.1% to 81 students due to incomplete answers, especially for ILP instrument, which students found it very long.

Table 1: *Demographic Data of Participants*

Demographic Variables	Mean	N	%	Min	Max	Range
	(SD)					
Age	20.85					
	-1.99					
Gender						
Male		29	35.8			
Female		52	64.2			
GPA	2.68			0.33	4	3.67

2.2. Procedures

The study was conducted following the policies of the participating university. Students included in the study were informed for the study purpose, and the appropriate directions were given to answer voluntarily to paper-and-pencil reporting tools.

2.3. Instruments

2.3.1. Inventory of Learning Patterns (ILP)

The English version of ILP was used to measure the learning patterns of undergraduate college students. The short version of ILP (Martínez-Fernández & García-Orriols, 2017; based on Vermunt, 1998) contains 60 self-reporting statements using a Likert-like scale. All the statements get organized in two parts: A and B. Students were asked to indicate to what extent each statement applies to them on a scale from 1; "Disagree Entirely' to 5; "Agree entirely." The statements cover four learning components: processing strategies, regulation strategies, conceptions of learning, and learning orientations where each component has five subscales. Consequently, four learning

patterns got identified; undirected (UD), meaning directed (MD), reproduction directed (RD), and application directed (AD) (Vermunt & Vermetten, 2004; Vermunt, 2005).

Table 2: *The ILP Likert Scale Answer Options*

In part A	In part B
1 = Disagree entirely	1 = I do this seldom or never
2 = Disagree for the most part	2 = I do this sometimes
3 = Undecided	3 = I do this regularly
4 = Agree for the most part	4 = I do this often
5 = Agree entirely	5 = I do this almost always

2.3.2. Student Engagement Inventory (SEI-C)

This study will use as a self-report instrument to measure student academic engagement. The two-dimensional model Student Engagement Instrument (SEI) is a result of studies done on existing literature regarding student engagement. Statements aim to measure three different contextual settings; family, peers, and school to identify two types of student engagement: cognitive and affective.

The original version of SEI (Appelton et al., 2006) includes 35 items which loaded six factors. The 6th factor, which consisted of two items, was removed after the latest researches (Betts et al., 2010). In this study, the SEI-C five-factor model was used. Cognitive engagement includes factors such as Control and Relevance of School Work (CRSW), and Future Goals (FG). The emotional engagement includes factors such as Teacher-Student Relationships (TSR), Peer Support for Learning (PSL) and Family Support for Learning (FSL).

Table 3: *The SEI Five-Factor Model*

Student Engagement	
Cognitive	**Affective**
Control and Relevance of School Work (CRSW)	Teacher-Students Relationships (TSR
Future Goals and Aspirations (FGA)	Peer Support for Learning (PSL)
	Family Support for Learning (FSL)

This self-reporting instrument was being answered based on a 4 Likert-like scale from "Strongly disagree' to "Strongly Agree."

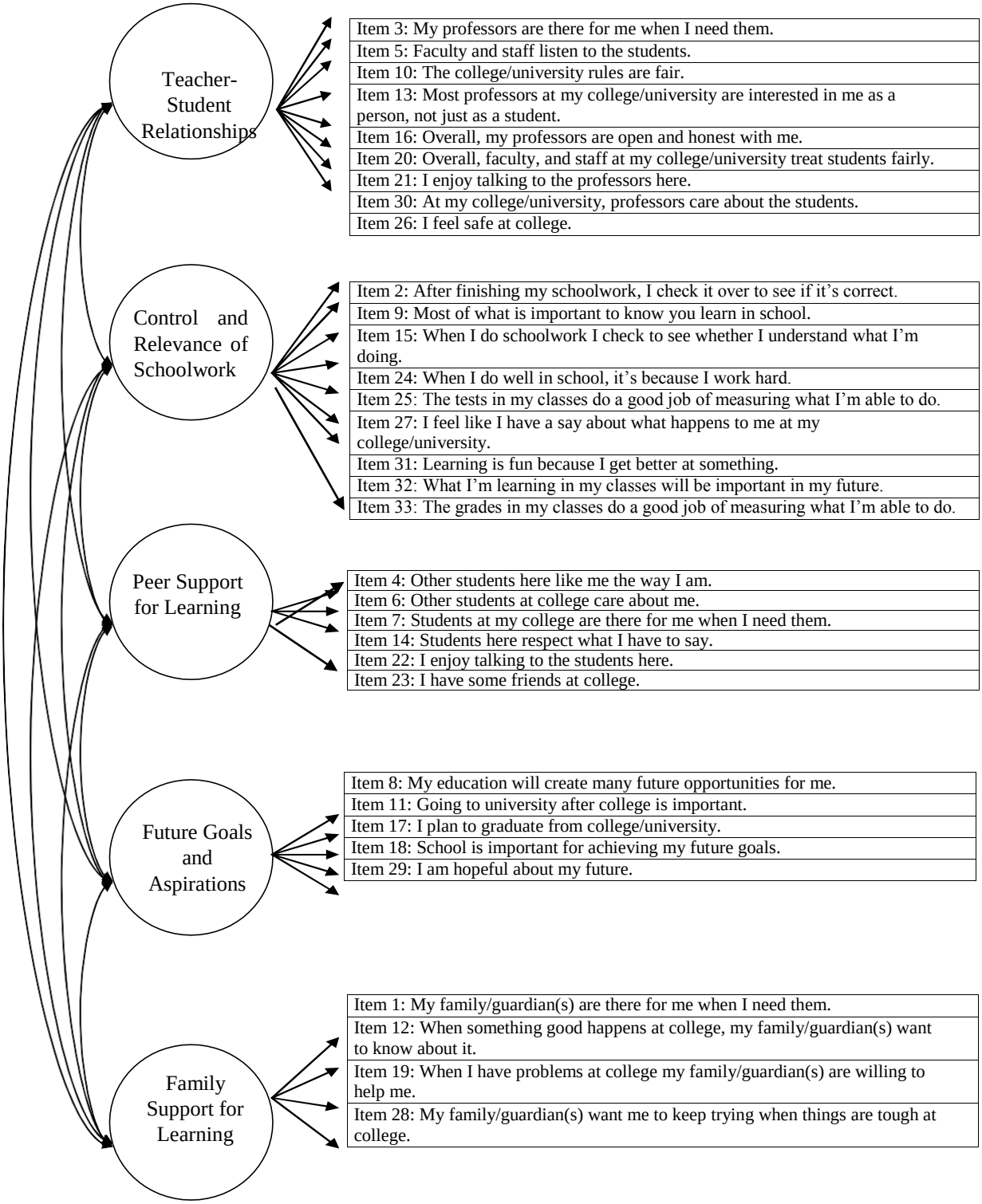

Figure 1: *The SEI Five-Factor Model*

3. Data Analysis

Correlational analysis was used to determine the relationship between student engagement and learning patterns. The surveys had very few missing data which were analyzed and replaced with series mean to get accurate results. The Cronbach Alpha (α) of internal consistency reliability was calculated for the subscales of both instruments. All the ILP-scales indicated an excellent internal consistency varying from .63 to .87. Meanwhile, the Cronbach alpha of the SEI-scales varied between .34 to .72.

Table 4: *Number of Items (N), Internal Consistency (Cronbach Alpha, Mean Item Means (M items), and Mean Item Standard Deviation (SD items) of ILP and SEI SCALES*

ILP-scales	***N***	***α***	***M***	***SD***
Meaning Directed	18	0.81	3.61	0.53
Application Directed	27	0.87	3.65	0.53
Reproduction Directed	15	0.81	3.61	0.57
Undirected	12	0.63	3.34	0.67
SEI- scales				
Teacher- Student Relationships	9	0.34	3.31	0.52
Control and Relevance of Schoolwork	9	0.73	3.18	0.39
Peer Support for Learning	6	0.79	2.94	0.53
Future Goals and Aspirations	5	0.72	3.52	0.47
Family Support for Learning	4	0.71	3.35	0.58

4. Results

The Pearson correlations among scales of learning patterns, scales of students' engagement and, college GPA are reported in Table 6. Firstly, the results showed that student's learning patterns were associated with student's type of engagement to learn. In this respect, Control and Relevance to School, Future Goals, and, Teacher-Student Relationships, were positively related to Meaning Directed pattern of learning. Secondly, Application Directed positively related to all of the above, besides, with Peer Support for Learning, p= .238. Thirdly, Undirected learning was positively related only with Peer Support for Learning, p= .271. Lastly, Reproduction Directed learning was positively related to all types of student engagement, except that of Family Support for Learning, p= .129.

Student GPA, as an indicator of student academic achievement, was strongly related with Application and Meaning Directed learning, respectively p= .309, p= .287. Also, there was present a positive weaker correlation of student GPA with Reproduction Directed pattern, p= .232, and a

negative, weak correlation with the Undirected pattern, p= -.061. On the other hand, student GPA positively strongly related with only two, among five, types of student engagement; Future Goals and Aspirations, p= .386 and, Relevance to School Work, p= .305.

Table 5: *Correlations between Scales of Learning Patterns, Scales of Student Engagement and Student' GPA*

Correlations											
		Meaning Directed	Application Directed	Reproduction Directed	Undirected	Teacher-Student Relationships	Peer Support for Learning	Family Support for Learning	Control and Relevance to School Work	Future Goals and Aspirations	GPA
Meaning Directed	Pearson Correlation	1	.854**	.695**	.412**	.263*	.207	.019	.407**	.332**	.287**
	Sig. (2-tailed)		.000	.000	.000	.018	.063	.865	.000	.002	.010
Application Directed	Pearson Correlation		1	.874**	.411**	.262*	.238*	.081	.448**	.478**	.309**
	Sig. (2-tailed)			.000	.000	.018	.033	.473	.000	.000	.005
Reproduction Directed	Pearson Correlation			1	.452**	.338**	.271*	.129	.450**	.453**	.232*
	Sig. (2-tailed)				.000	.002	.014	.252	.000	.000	.037
Undirected	Pearson Correlation				1	.129	.271*	-.021	.162	.133	-.061
	Sig. (2-tailed)					.249	.015	.849	.149	.237	.590
GPA	Pearson Correlation					.068	.079	.115	.350**	.386**	1
	Sig. (2-tailed)					.544	.482	.306	.001	.000	
**. Correlation is significant at the 0.01 level (2-tailed).											
*. Correlation is significant at the 0.05 level (2-tailed).											

5. Conclusion and Discussion

The objective of this study was to see whether there are correlations between student learning patterns and student engagement among a group of Kuwaiti undergraduate students and to understand cultural factors, as well.

The main research question was: What is the relationship between the learning patterns, academic engagement, and GPA among college students? This question answers as follows. Learning patterns are positively related to student academic engagement. Application directed learners were found to have control over their school work (CRSW engagement), which means that they tend more to review the learned material, find the learning material relevant and meaningful, value their achievements as a result of their hard work and consider their grades as an indicator of their work. At the same time, application directed learners seemed to consider, in general, studying and learning as an important factor of their future achievements, and specifically, of their future studies (FGA engagement).

In the same way, meaning directed learners were more predisposed to engage in two types of learning: control and relevance to study work (CRSW) and, to relate their future aspirations to the actual process of learning (FGA). According to Appelton et al. (2006), CRSW and FGA type of engagement consider as cognitive ones because of the perceptions of learning and metacognitive processes involved in learning.

Surprisingly, reproductive learners showed both cognitive and emotional engagement. It looks like these learners use all possible ways towards academic achievement. Reproductive learners consider learning meaningful for their future, have control over study work like repeating the learned material, consider grades as an accurate measuring tool of their work but, at the same time, they need to have positive relationships with their teachers and friends. Said so, these learners need to feel that they can have people to rely on to solve their difficulties of learning. They need to feel that they have friends, to feel safe in college and, to enjoy talking with their teachers. Even though these students show external regulation to learning, using sources like teachers and friends (TSR and PSL), the fact that they consider learning as being essential to their future (FGA), showing control over studying like repeating the material and preparing for tests (CRSW), makes it possible for them to have a high GPA. As shown in the results section, reproduction pattern of learning is positively related to student GPA, $p = .232$, but, this pattern is not successful as much as meaning and application directed patterns; respectively $p = .287$, $p = .309$.

Undirected learners seemed not to show any particular way of academic engagement, except for that oriented towards friends and peers (PSL), p=.271. These students have a lack of regulation of studying and attach value to being stimulated by their friends. Students with the undirected pattern of learning were found to have poor control and relevance to school work, do not consider learning process and studying important for their future, and do not consider teachers and family as helpers on their learning difficulties. Being so unregulated, even externally, leads them to have a poor academic achievement (GPA, p= -.061).

Since all the participants of this study were Kuwaitis, it is essential to mention some facts about the socio-economic, cultural background of Kuwait.

Kuwait is a geographically small, but a wealthy country which depends on petroleum revenues and has an influencing role for the economy in GCC countries since 1975 with the Nationalization of Kuwait's oil industry. Among all other benefits, the citizens of Kuwait have the right of a full scholarship, including private and public education, for their studies inside the country. Furthermore, youngsters following higher education studies, get monthly payments during all years of school. The government encourages families to enroll their children in college and university. Religiously, Kuwait is a homogeneous Muslim country which has a reputable institution for the family and, is community-driven. As a cultural pattern, youngsters tend to attach great importance to daily relationships and organize their life inside the college campus, mostly with their friends and teachers. This study showed the respective learning patterns; meaning, application and, reproduction directed; having a strong positive correlation with student achievement (GPA), and, at the same time, with teacher-student relationship and peer support for learning. Previous studies using ILP instrument, meaning, and application directed patterns of learning are considered to be used by students with high self-regulation, with a personal construction of knowledge and one's responsibility for learning. Therefore, it makes a commonsense not to associate these patterns of learning with the component of relationships during the learning process. That is not the case of Kuwaiti undergraduates who appeared to orientate toward their peers and teachers, otherwise speaking, show emotive engagement. Even though this study revealed that students learning patterns, except undirected learning, are strongly associated with the emotive type of academic engagement, there is a need to further clarification of the family support for learning (FSL).

In summary, the results of this study found that student patterns of learning, related to their academic engagement, and student GPA. The finding strengthens the responsibility of universities to provide support services to help students overcome possible barriers in learning. Meaning and application directed learning patterns, which are, in general, viewed as more appropriate for studies in higher education (Baeten et al., 2010), are positively related with teacher-student relationships and peer support. That is to say that teachers should consider more their role in students' academic achievement and, for the universities, to create curricula which include group learning.

6. Strengths and Limitations

There is a considerable body of studies about learning patterns and student academic engagement among undergraduates in different countries, but there are very few, almost none, in Kuwait higher education. Said so, the most substantial advantage of this study is on their participants. Furthermore, considering the demographic homogeneity of the subjects, this study can be considered as an essential source of information for other similar higher educational contexts, such as other Middle East countries.

We should also be aware of some of the limitations of this study. One such limitation stems from the small number of participants, which might affect the final data. A continuing study will follow with a considerably higher number of participants. Another limitation can be that the participants were all majoring in Engineering and Business College. It will not be surprising to have different data if the participants were of different majors.

Our results showed that there is a correlation between student learning patterns, academic engagement, and academic achievement. Despite that, there is still a need to clarify the relation of learning patterns with emotive engagement type, which consists of peer support, family support, and the teacher-student relationship. Although the relationship with the teacher seems to be essential for application- and meaning directed learners, the same does not apply for peer and family support. Does this mean that, for this cultural context, students' relations with their teacher are essential to the extent of being a distinct type of engagement, both emotive and cognitive?

A surprising result was that the family support does not correlate with learning patterns and negatively related to the GPA. Future studies need to extend these findings by estimating the validity of the SEI-C instrument. The original assumption the undirected learners are oriented to their peers and families (Vermunt, 1998), needs to be tested in a Muslim student sample.

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