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Regulation of Learning: From the Perspective of Male Students in Pakistan


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Abstract

Studies have shown that the students' regulation of learning is associated to their learning outcomes, cognitive processing strategies and understanding of the content. In Pakistan, it was suggested that science students at secondary school possesses inadequate learning behaviours which diminished regulation of learning behaviours. This study was conducted with the intention to explore the issue of regulation of learning among secondary school science students in Pakistan. Twenty-four male students were selected purposefully to participate in the study. The data was collected through focus group interviews to understand their view of self-regulation of learning behaviour. The Applied Thematic Analysis was executed to analyse the student's comments. It was found that the external regulation of learning in Pakistani secondary school science students were presence. Three common factors such as gender, teaching methods, and field of study were highlighted by the participants as a vital role in the development of external regulation of learning. The findings promote changes in teaching and learning approaches at the Pakistani secondary school level in science teaching.

Keywords

Regulation of Learning, External Regulation of Learning, Self-Regulation of Learning, Pakistan Secondary Schools, Science Education, Focus Group Interview, Applied Thematic Analysis

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Regulation of Learning: From the Perspective of Male Students in Pakistan

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Studies have shown that the students' regulation of learning is associated to their learning outcomes, cognitive processing strategies and understanding of the content. In Pakistan, it was suggested that science students at secondary school possesses inadequate learning behaviours which diminished regulation of learning behaviours. This study was conducted with the intention to explore the issue of regulation of learning among secondary school science students in Pakistan. Twenty-four male students were selected purposefully to participate in the study. The data was collected through focus group interviews to understand their view of self-regulation of learning behaviour. The Applied Thematic Analysis was executed to analyse the student's comments. It was found that the external regulation of learning in Pakistani secondary school science students were presence. Three common factors such as gender, teaching methods, and field of study were highlighted by the participants as a vital role in the development of external regulation of learning. The findings promote changes in teaching and learning approaches at the Pakistani secondary school level in science teaching. Keywords: Regulation of Learning, External Regulation of Learning, Self-Regulation of Learning, Pakistan Secondary Schools, Science Education, Focus Group Interview, Applied Thematic Analysis

Introduction

Self-regulation of learning appears as an ideal learning disposition that associated to students' academic success (Pintrich, 2004; Vermunt, 2005). The construct provides a new avenue to explain students' learning behaviour in educational institutions (Helle, Laakkonen, Tuijula, & Vermunt, 2013), mediating effect between students' personal and contextual learning behaviour and academic performance (Pintrich, 2004) and bridging students' conceptions of learning and learning orientations that are rather fixed and personal in nature, to their academic learning outcomes (Vermunt, 1998; Vermetten, Lodewijks, & Vermunt, 1999). It also appears as characteristic of independent deep and meaningful learning (Vermunt, 2005).

Regulation of learning is commonly described as one's ability to utilize effectively different cognitive processing strategies to derive desired learning outcomes (Vermetten, Lodewijks, & Vermunt, 1999; Vermunt, 1998, 2005). According to Vermunt (2005), there are three types of regulation of learning including self-regulation, external regulation and lack of any form of regulation. In a simple term, self-regulation is described as student's regulation learning processes through the application of planning, monitoring, problem identification, adjusting and reflection activities in their learning. Whereas the external regulation of learning is described as the regulation of learning by individuals other than students who plan, monitor, identify problems, modify students' learning behaviour and evaluate students' learning. On the

other, the lack of regulation of learning is to refer to someone that have none of these two types of regulation of learning (Vermunt, 1998).

In practice, self-regulation is considered as an ideal regulation of learning because it is positively related to students' academic performance (Pintrich, 2004), and their personal interest in learning (Helle et al., 2013). At schools, according to Boekaerts (1997), students usually started their own learning process by deciding their learning goals. Their goal to understand or to extend their existing knowledge indicates their personal interest and motivation to learn. They are well aware of different cognitive, motivational and regulation strategies which can lead them to comprehension of knowledge tried to differentiate the characteristics of self-regulated learners with students that having external regulation of learning or lack of any kind of regulation of learning. However, the contextual factors in schools could inhibit or foster self-regulation of learning in students (Boekaerts, 1997). The traditional teaching methods for example characterize students as passive learners and textbook knowledge absorbers, cannot promote self-regulation of learning in students (Leary, 2012).

In Pakistan, the education system still follows the traditional teacher-centred teaching approach at secondary school level (Malik, 2012). In regards to gender, the failure rate in annual examinations was quite higher in male secondary school science students (Bureau of Development Statistics Punjab, 2014). Literature has also reported the presence of inadequate learning behaviours in male students than female students in Pakistan (Khan et al., 2014). Male students also found to have not as much of self-regulation of learning abilities as female students in Pakistan (Khan, Arif, Noor, & Muneer, 2014). As such, it is imperative to research the regulation of learning of Pakistani male secondary school science students.

Moreover, the research on regulation of learning in secondary schools is limited as compared to its existence at higher education level (Baird, Scott, Dearing, & Hamill, 2009; Deed, 2010; Gouin, 2012), and the research on regulation of learning in Pakistan is scarce at all levels. In a self-reported study by Hashemyolia, Asmuni, Ahmad, Shaffe, and Jasmin (2015) the science students were particularly found to have lower levels of self-regulation of learning, even at university level, where there were more opportunities to self-regulate learning. However, Winne (2013) did not favour the use of self-reported questionnaires to identify the students' regulation of learning behaviour. Sometimes students reported strategies through self-reported questionnaires were different from the real ones (McNamara, 2011). This offer insight for personal exploration through reflection to be another option of understanding of the student's learning processes.

This article is written based on a doctoral study conducted to explore the regulation of learning of the Pakistani secondary science students. As an educational staff at one university in Pakistan, we found that the issue of regulation of learning in some parts requires further exploration. The unique issue of Pakistani classroom was overcrowded number of students which affect the teaching and learning activities (Malik, 2012). Through personal exploration the understanding of the regulation of learning among students is developed. Iqbal, Sohail, and Shahzad (2010) highlighted a need to impart knowledge of learning strategies to students to help Pakistani students become independent strategic learners.

As such, considering the argument that the self-reported questionnaires can lead to fictitious descriptions of students' regulation of learning, the reliance on students' self-reported behaviour should be avoided. This qualitative study was attempted to explore the secondary school science students' regulation of learning behaviour in Pakistan. Without any intention to do comparison between boys and girls, this qualitative exploration permitted the study to uncover the regulation of learning from the view of male science students in Pakistan. Three main types of regulation of learning based on Vermunt (2005) namely the external regulation of learning, self-regulation of learning and lack of regulation of learning were treated as a guideline for the exploration.

Methods

This study utilizing qualitative research design to explore the views of students' regulation of learning at school. As noted by Berg (2009) "what humans say and do are the results of how they interpret their social world" (p. 9), the focus group research approach as such was selected for the study. The focus group interview enables the researcher to capture and to understand how the participants view regulation of learning in their learning at schools based on the participant's personal perceptions and subjective apprehensions (Berg, 2009).

The focus group approach was also designed purposely for small groups of unrelated participants whereby the group discussion was led by the researcher. By doing this the researcher able to learn the participants conscious, semiconscious and unconscious issues (Larson, Grudens-Schuck, & Lundy, 2004), how they arrange themselves in specific learning settings and make sense of it in their learning activities.

Twenty-four male science students for the district of Punjabi were involved in this study. They were selected by using purposively sampling procedure based on two criteria such their socio-economic background and schooling in a public school. They were divided into four smaller groups which consists of six participants in each group. Krueger (1994) suggested that for complex problems such as regulation of learning, the focus group size should be decided to not more than seven participants. It is also noted that larger groups may have the potential of complicating control and understanding over the group member information (Breakwell, Hammond, Fife-Schaw, & Smith, 2006). The decision was also considered the "group think" issues as highlighted by Berg (2009) where the tendency of participants to jump into specific opinions as a result of sub-group pressure need to anticipated.

The interview schedule was prepared by consulting the different issues of the learning pattern theory. The initial interview protocol was tested on representative sample and the time taken and students' responses were ascertained to finalize the final and original interview protocol to explore the different aspects of students' regulation of learning.

In the actual focus group interview sessions, the participants were involved in the discussion for about 25 minutes. The interviews were conducted in Urdu language but later the verbatim was translated into English for data analysis purposes. NVivo 10 facilitated the data management into manageable and distinct categories and themes. Applied thematic analysis approach (Guest, MacQueen, & Namey, 2012) was used to uncovered the Pakistani secondary school science students which covers the social process of regulation of learning behavior (Javadi & Zarea, 2016).

The thematic analysis was carried out by following the subsequent steps to conduct thematic analysis outlined by Braun and Clarke, 2006. The researcher himself conducted the focus group interviews, which helped him to familiarize himself with the data. The theory of learning patterns helped to identify the codes. The ideas and themes in learning pattern theory was used to connect different codes into themes. The themes and sub-themes were evaluated in line to the different constructs and sub-constructs outlined in the theory of learning pattern.

The qualitative responses, themes and sub-themes were quantified through percentage scores to see the recurring themes. The qualitative research demands a kind of trustworthiness and rigour being too much interest and involvement of the researcher in the field. Peer debriefing (Ely, 1991) was the one technique used to carryout rational decisions. The issues related to research design such as sample size, interview protocol, data collection and analysis were finalized by the peer debriefing technique. The peer check technique at the final analysis stage (Ely, 1991) was employed to make analysis more trustworthy. The process of coding, sub-themes and themes generation was evaluated by one PhD fellow of the second author. The necessary adjustments were made as well to address his suggestions.

Results

It appears that the external regulation of learning was the dominant type of regulation of learning among male secondary school science students of Pakistan. The following excerpts show, the external regulation of learning was the most frequent kind of regulation of learning found in Pakistani science students at secondary school level. The least recurring regulation of learning were self-regulation, and lack of any kind of regulation (Figure 1).

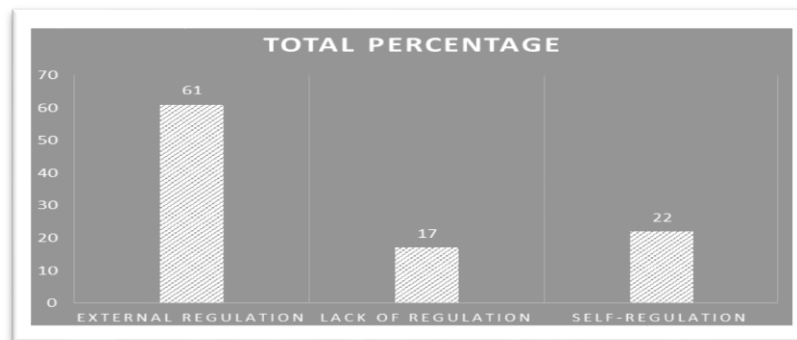


Figure 1 Regulation of Learning

External Regulation of Learning

The regulation of learning in secondary school science students was regulated by the external sources. The instructors were the highly referred source of external regulation of learning followed by the private tutors and parents who regulated the students' learning. The assignments were usually, instructed by the teachers and not initiated by the students. They don't do the decision making about their study. Some of the students were also "activity-abider" such as setting up timetable at home, tuition and at school which was set by instructors. Following excerpts indicated students' dependence on their teachers even to plan and suggest their home learning activities. What to study, when to study and how to study types of questions were answered by teachers. Students who can afford private tuition face the same authoritative and directive role of tutors in their planning and regulation of learning. Therefore, student learning related decisions were the sole discretion of teachers and students:

Our instructor has decided our timetable for us.

The timetable is planned by tuition centre.

In this highly teacher centred instruction, students were unable to develop and desire for self-regulation. The students were unable to exhibit intrinsic motivation, a prerequisite for deep learning. In this way, students lacked internal motivation to learn and they followed the timetable set by instructors, private tutors and parents. It seems that the students' regulation of learning was the responsibility of tutors or instructors, or of both in some cases. The external regulation of learning and surface learning are observable in the following excerpt. Students memorize the content, being externally regulated at school and at private tuition; he does not effort to understand the information and content. There is presence of too much external control at school and even at private tuition. Rehearsal or drill to memorize the information appears as the only cognitive processing strategy in the transmission-teaching model present in Pakistani secondary schools that focuses on one-way transmission of knowledge (Maphosa & Kalenga, 2012).

After departing from here, I rest at home, get lunch and later I sleep. Afterwards, I go for private tuition. There I memorize the lesson, and then the tutor gets to my concepts clear. In a way, I learn the same in school and later at tuition. In this manner, it gets easier to memorize (retrieve or recall) the lesson.

The excerpts highlighted that students take private tuition to memorize things taught at the school. The students do not use the deep learning and cognitive processing strategies to understand the learning content on their own. Rather, the private tutors explain things to them. They rely on their explanations. The same learning material, rehearse at tuition and school, simplified for them to memorize the explanations. They see the instructors as sources for learning activities. It suggests that schools and tuition centres both do not provide freedom and opportunities to students to regulate learning. The following excerpt indicated that students are expected to memorize and reproduce the information, which is assigned only by the schoolteachers:

We do the daily work assigned (by school), and reproduce it for the teacher daily.

The students' keep on doing the assigned work at school and by using the drill they just memorize the learned material so that they can reproduce it to the instructors in the next morning. The intake of knowledge and its reproduction appear the paramount outputs of external regulation of learning. External regulation of learning accompanies a surface learning approach in students. The students have an external regulation of learning memorize the content assigned through a drill at school, tuition centre and home. The students are not ready to accept the responsibility of learning and they think that their learning can be regulated in a better fashion, if they take the private tuition to be regular and successful in their learning. The external regulation of learning is linked to lack of internal motivation to learn. Subsequently, students have a concept that they should attend schools and tuition centres, to ensure drill, and rehearsal of information taught in schools. On the other hand, schools have dominantly the information transmission teaching methods. Thus, the sole motivation to join any academy is to ensure consistent external regulation to help students memorize facts taught at school as like it is indicated in following:

Most of us have joined the academy or have tuition; they ensure repeated revisions of lessons or course of study.

As such, the deficiency of motivational, cognitive processing strategies is a characteristic of these externally regulated students who use drill and do not know effective motivational and regulation strategies to regulate their learning. They were unable to describe any motivational and regulation strategy they use to control their learning process. They stated that if they do good deeds and behaved well, then automatically, their focus and control of their study will increase, and they will overcome distractions in their studies. Students in following accepts being unable to employ effective self-regulation of learning and because of having no knowledge of effective self-regulation techniques, have developed misconceptions about strategies and techniques of self-regulation:

We perform good deeds that will not take place.

If we pray regularly, this thing will deter the bad and ill thoughts.

However, for some students who can't afford to have such facilities they were left with no option to manage their learning.

Self-Regulation of Learning

There were the traces of self-regulation of learning in the responses of a few students. The ideal and desirable type of regulation of learning was limited to only to plan a timetable for the studies. The students who planned their timetable were those who cannot afford private tutors because of parent's socio-economic problems. In this way, students were left to decide on their own when they want to read. However, the school instructors regulated the rest of the elements of students' regulation of learning such as results and process of learning. They just ensure that they do everything at school and at home on their own. Following excerpts highlighted the underdeveloped traces of self-regulation of learning which is just to ensure catch up things going at schools in routine.

We have not planned to such a detail, but we have just planned that we will read mathematics at this time and we will do this thing at this time.

We plan our timetable, and by attending school daily, our study becomes regular. If someone does not go to the academy, then he should study all subject daily at home.

Lack of Regulation of Learning

The participants were also found have lack regulation of learning which is not desirable in any case. The students who reported this type of regulation of learning seems to be having inadequate conceptions of the benefits of time management and learning process. They have the misconception that they should read and study without any planning and academic target. They saw learning as a responsibility they inherited from generation to generation. As a consequence, if they failed to get along or to achieve that target, it would get them disgruntled of their learning. Following excerpts exposed students' justifications for not having self-regulation of learning. These students provided justification for lack of both kinds of regulation, self-regulation and external regulation of learning.

He (someone) should do so much as he can. He should not plan for more than he could not do.

We should have no plans.

If, he (someone) will start to think too much, he will be fed up of it (study).

If he will think too much (about the planning), then, he forgot already learned things; therefore, he should do as much as he can.

Discussion

The presence of external regulation of learning as the dominant type of regulation of learning in Pakistani male secondary school science students provided an explanation for higher levels of memorization in Pakistani secondary school science students. The Pakistani Public schools at secondary school level do not encourage students to be active decision makers

in their studies at school and students rote learn the information by drill and rehearsal in science learning (Malik, 2012). Students' self-regulation of science learning appears as an important contributor in determine their strategies to science learning and conceptions of learning science (Li, Zheng, Liang, Zhang, & Tsai, 2016). The drill and memorization strategies of science learning in Pakistani science students depict their lower level conceptions of learning science and self-regulation of learning science (Li et al., 2016). The science discipline itself is also found to relate to low self-regulation of learning in students (Hashemyolia et al., 2015). Weinstein, Jenefer, and Dierking (2000) discussed the systematic approach to learning and the different eight steps of self-regulation learning appeared extinct in Pakistani secondary school students.

Therefore, little support for self-regulation in the teaching learning environment and students being of science discipline the presence of external regulation in these students was inevitable. The external regulation also is found to relate to raising the level of memorization and surface learning in students (Kolić-Vehovec, Bajšanski, & Zubković, 2010). Therefore, the explored higher level of external regulation of learning, affirm the previous studies which highlighted the presence higher levels of memorization and lack of understanding of content in Pakistani students (Ali, Ali, & Naz, 2012; Bibi, 2012; Malik, 2012).

The variables of self-efficacy and students' learning goals are positively associated with the level of self-regulation in students (Pintrich, 2000). Higher degree of self-efficacy and understanding of content as a learning goal extinct in Pakistani secondary school students (Akhtar, 2007; Malik, 2012) raised the external regulation of learning. The favourable context and environment is too indispensable to promote self-regulation in students (Boekaerts, 1997). Being self-regulated learning associated to students' efficacy beliefs and their beliefs that classroom activities are interesting (Pintrich & De Groot, 1990), the lack of self-regulation in Pakistani students expressed the lack of students' interest in studies at schools.

The student centred teaching environments provide opportunities for students to work as independent and active learners, ensure the development of self-regulation in students (Leary, 2012). The teaching methods applied in secondary school education in Pakistan are teacher centred teaching methods (Malik, 2012), which cannot promote self-regulation in Pakistani science students at secondary level. The teaching methods in Pakistan inhibit the students' active participation in knowledge construction and students memorize the text specified by instructors from textbooks (Shaheen, 2010).

Additionally, examination system in Pakistan at secondary school level lack formative assessments that promote inadequate and undesirable regulation of learning in students (Ali et al., 2012). Moreover, one element related to students' self-regulation of learning is the level of their knowledge of self-regulation strategies. The Pakistani students lack this knowledge (Hasan, 2011), and they fail to exhibit self-regulation of learning. The current qualitative study also revealed the Pakistani students' limited knowledge of cognitive processing, regulation and motivation strategies, which caused to external regulation of learning in students. However, introduction of self-regulated learning interventions at secondary school science teaching (Leidinger & Perels, 2012) can improve the regulation of learning behavior of Pakistani students.as well as to support them to exhibit better academic performance (Leidinger & Perels, 2012).

The external regulation of learning seems to be the general type of regulation of learning in Pakistani secondary school science students. The teaching method used in schools in Pakistan and sample characteristics being male, science students, and students' lack of knowledge of effective cognitive and learning strategies appear as the factors responsible for the presence of external regulation of learning in students, which have provided the explanation for this type of regulation in Pakistani secondary school science students. The shift towards student centred teaching methods in Pakistan, seems impossible at once because these methods

involve small group and individual activities. The Pakistani schools are overcrowded (Malik, 2012), and the government in the education sector does not allocate large amounts of financial resources. Instead, students should be provided at least knowledge of regulation strategies so that they can raise their current level of regulation of learning to some extent. The voice from the students whispered that regulation of learning is influenced significantly by the learning environment and facilities at school and at home. It also suggested further clarification by designing specific interventions on students' regulation of learning to the existing scenario in Pakistan to confirm that specific decisions will produce more self-regulated students in future.

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