

Nature of Conceptions of Learning in a Collectivistic Society: A Qualitative Case Study of Pakistan

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ABSTRACT

Conceptions of learning determine students' ways to learn, motivations and expectations in schools. Conceptions have potential to understand and mold their learning behaviors at schools. Certain types of conceptions of learning appear obvious feature of students performing poorly in schools. Literature suggests that students' conceptions of learning are affected by students' social and cultural backgrounds. Students in underdeveloped, minority and Asian social and cultures have quite different conceptions than the students in developed countries. In Pakistani public school, most students are from the lower socio-economic background. Available literature reports drill, memorization, and external regulation of learning and lack of adequate motivation to learn in students of these schools, which signpost undesired conceptions of learning. The current study deals with the students studying in Pakistani schools to determine and understand their conception of learning. A qualitative data collection approach was used to collect the data from the respondents. An approach of applied thematic analysis used reduced qualitative data into themes, sub-themes and into sub-sub-themes. The thematic analysis corroborated Pakistani secondary school science students' intake of knowledge and cooperation conceptions of learning. The findings were in line to various studies on Asian students. The high failing rate at secondary school level in science education in Pakistani schools is congruent to presence of intake of knowledge and cooperation conceptions of learning.

Keywords: conceptions of learning, science students, intake of knowledge, cooperation, thematic analysis

INTRODUCTION

Our great variety of conceptions and beliefs shape our routine life activities. Their effects account for our individual and social interactions. Congruence of these conceptions and beliefs to our surroundings pave our way to success in different institutions of society and incongruence result in failure and disappointment. The educational aspect of someone's life is very crucial in someone's life. It is very critical to ensure adequacy and congruence of students' conceptions and beliefs to the demands and requirements in schools. However, students' quality learning involves all school's activities. The way students look and partake different learning activities is depended on their conceptions of learning.

Conceptions of Learning

Conceptions of learning are sets of assimilated beliefs in learning process, learning strategies, learning outcomes, and their role as learners in learning process (Vermunt & Vermetten, 2004). However, the sources of

Contribution of this paper to the literature

- The paper adds information about Pakistani students' conceptions of learning to the existing pool of knowledge which predominantly have literature on students' conceptions of learning from western and south Asian Chinese students.
- The students from Muslim world and Muslim cultures are more or less not probed for their conceptions of learning in perspective of their cultural values.
- The study broadens the scope of literature about conceptions of learning and their association to Muslim cultural values. This paper provided directions to understand and explain the learning problems and issues faced by students during their education in their country and abroad.

these conceptions of learning are not limited to individual self and students' past experiences, social and educational demands engender their conceptions of learning (Pillay et al., 2000). Apart from societal factors, educational settings; formal education (educators, courses, school discipline and school climates) and informal education (parents, culture values in society) enculture students' conceptions of learning (Choi, 2016). The nature of these conceptions of learning can be used to explain differences in students' academic performance (Alamdarloo et al., 2013). Pivotal and central aspects of students' learning and academic performance such as their regulation of learning, learning approaches, and learning orientations are meaningfully related to their conceptions of learning, (Vermunt, 1996, 2005; Vermunt & Vermetten, 2004). Thus, questions such as; how students understand subject matter? Why they use certain strategies to learn at school? Why students confine themselves to memorization of content? Alternatively, why students try to comprehend subject matter? All foresaid questions can be answered to a great extent by having an understanding of their conceptions of learning (Crawford et al., 1998; Minasian-Batmanian et al., 2006).

The seminal work of Säljö (1979) exposed five conceptions of learning in students. These were viewing or conceiving learning as growth in knowledge in terms of quantity, memorization, acquire knowledge to use it, draw meanings from knowledge and crafting knowledge to understand reality. Later, Marton et al. (1993) extended this continuum of Säljö's five conceptions of learning (Säljö, 1979). They found sixth conception, conceptions of learning as a change in a person. The seminal work of Säljö (1979) and Marton et al. (1993) did not link and relate these conceptions to other constructs in a meaningful and operative way. Vermunt (1987) described five conceptions of learners in a much broader way than Säljö (1979) and Marton et al. (1993). Vermunt linked his categorization of five conceptions of learning to other learning dispositions; regulation of learning, learning orientation and cognitive processing strategies to describe students' learning in a much holistic way as learning styles (Vermunt, 1987, 1996). The variations and differences in students' conceptions of learning and learning orientations influence their regulation of learning and information processing strategies, which consequence into four different learning patterns or styles (Vermunt, 2005).

In acclaimed theory of learning patterns Vermunt and Vermetten (2004), discussed students' conceptions of learning as construction of knowledge, intake of knowledge, use of knowledge, stimulating education, and cooperative learning. These five categories in conceptions of learning explain students' different learning behaviours and learning outcomes. Ideal attributes for students of 21st century students such as self-regulation, self-motivation intrinsic motivation (Zimmerman, 2002) and higher order learning outcomes of subject knowledge like understanding, application, synthesis and evaluation of knowledge and information have positive relationships to construction of knowledge and use of knowledge conceptions of learning. (Vermunt, 2005). Consequently, these are highly desired for students to succeed in current information era. However, cooperation conceptions of learning prevail in students who demonstrated poor academic performance (Vermunt, 2005) and thus, these are not preferred for students. Contrary to other learning dispositions such as learning approaches, learning orientations, and cognitive processing strategies, conceptions of learning develop over a schooling period, consequently these remain stable and consistent across a number of learning situations and contexts (Crawford et al., 1998; Edmunds & Richardson, 2009; Minasian-Batmanian et al., 2006). In this way, these overarch all other components of students' schooling.

Origin of Conceptions of Learning

Students being members of a society, acquire a particular set of conceptions and beliefs about school and its functioning socialized by the community and society. Any society consistently echo students' perceived roles for future their life that shape students' conceptions of learning. The functions of school, the role of learners in learning and nature of epistemological stance of society and community enculture students' conceptions of learning. Students' learning behaviour at schools is determined by their social goals (King & McNerney, 2016). Students effort to adopt socially approved learning behaviours. This social concern and social affiliation beget particular conceptions of learning among students. Values and beliefs that dominate and prevail in any society filter students'

individually developed beliefs (Pillay et al., 2000). Students struggle for congruence of their individual learning conceptions and beliefs to socially accepted beliefs, conceptions and social expectations. So the development of conceptions of learning appears, dominantly as a social phenomenon because individuals advance their conceptions inline to demands, confirmation and usability in society.

A qualitative study by Rosário et al. (2014), revealed that students perceive their learning process in view to their learning activities at school. Likewise, the process and approach opted to evaluate students' learning in schools inspire students' to conceive learning in particular ways. In this regard, knowledge testing examinations approach instigate intake of knowledge conceptions of learning in students and discourage construction of knowledge and use of knowledge conceptions of learning in students (Watters & Watters, 2007).

Teaching learning cultures, examination approaches and system of education encourage students to perceive learning congruent to what society consistently reverberate its social and educational institutions. Rosário et al. (2014) explored students' conceptions of learning having reflections of their perceived roles for future life and social class they belong. Although, intake of knowledge' conceptions of learning appear as most common conceptions of learning in students (Watters & Watters, 2007), however, construction of knowledge conceptions of learning common in white students as compared to intake of knowledge conceptions of learning in minority African and Asian students.

Cross-Cultural Conceptions of Learning across Collectivism and Individualism Cultures

At global scale, culture and social setup effect students' ways and beliefs about learning at schools. Consequently, individualism and collectivism dichotomy is used to understand variations in different aspects of cultures across the world. Particularly, certain idiosyncratic aspects of a society can be explained in perspective to its individualism score and rank. The cultures promoting individualism promote different ideas for development and learning in schools than those promoting collectivism (Rothstein-Fisch et al., 2010). The collectivist cultures discourage independence and promote interdependence in students (Rothstein-Fisch et al., 2010). Confirmatory, obedience to authority and lack of independence are key characteristics of collectivism cultures, which are not supporting attributes for development of construction of knowledge and use of knowledge conceptions of learning. On the other hand, individualism and collectivism status and score of any nation is dependent on many social, cultural, economic and religious variables of a society and nation. A caveat exists there for explaining idiosyncratic learning behaviours in reference to this social and cultural dichotomy. Because individualism-collectivism appear as a dependent variable, which is a product of various societal forces and powers (Voronov & Singer, 2002).

Most research on students' conceptions of learning is in countries that promote individualism and have provisions in letter and spirit for citizens be independent, have freedom of opinion and have traditions for democratic governments such as USA and most European countries. The models of conceptions of learning is almost similar in these countries. The seminal work of Säljö (1979) in Sweden was affirmed by Marton et al. (1993) in Britain. Also, Duarte (2007) found the same set of conceptions of learning in Portuguese students as by Marton et al. (1993) in British students. The conceptions of learning models being developed dominantly in individualistic cultures face limitations when applied to collectivistic cultures. Among collectivism cultures in Asia like Chinese cultures in Singapore, Hong Kong and Taiwan; there exists research on students' conceptions of learning. Certain learning behaviours of these Chinese students cannot be explained in viewpoint of western research (Biggs, 1998; Kember, 1996, 2000; Kember & Gow, 1990, 1991).

Kember (2016) studied Chinese Hong Kong students' conceptions of learning. Hong Kong has a collectivism culture. Hong Kong ranked 54, with individualism score of 25 (Hofstede et al., 2010). Kember (2016) elucidated Chinese paradox. Chinese Hong Kong students used an intermediate approach of learning. Aside from deep and surface learning approach dominant in western culture, Chinese students tend to memorize and understand simultaneously in consequence of their conceptions and beliefs of learning acquired over years schooling. Kember and his colleagues conducted various studies to understand the conceptions of learning and learning behaviour of Chinese students in Hong Kong. They found a narrow approach in students who first try to understand the learning material and then memorize it. These students' conceptions of learning were somehow unique and different from their counterpart in west. Western students do not have such dissonant conceptions of understanding and memorization (Kember & Gow, 1990). These dissonant conceptions of learning was a result of social and cultural differences in pedagogy and schooling in Hong Kong and western countries (Kember & Gow, 1991). The Chinese students viewed learning as a process to understand the knowledge, however they conceive memorization complimentary for acquiring understanding of the learning material in their learning process; students thought memorizing would help them in exams (Kember, 1996, 2000). In perspective of collectivism culture of Hong Kong, submission to authority is a characteristic of collectivistic society (Hofstede et al., 2010). Consequently, Hong Kong Chinese students entering in universities were hold reproductive conceptions of learning; they accept knowledge as such presented to them by teachers because of their belief in authority of teachers (Kember, 2001). Studies of

Kember and his colleagues acknowledged differences in conceptions of learning between east and west cultures across individualist and collectivistic values.

In a cross cultural study, Liem (2016) compared conceptions of learning of Australian students and Indonesian students. Australian society is highly individualistic as compared to Indonesian, which is collectivistic (Hofstede et al., 2010). Liem (2016) found Indonesian students to have achieving learning approach more than Australians who used more surface learning approach and less achieving approach. The Indonesian students struggle for collective goals conforming security and tradition. The Australian students struggle for individual goals like self enhancement, openness to change and pleasure seeking. In this way, learning beliefs and behaviors seems co-existed with individualist and collectivist values.

Luo and Yeung (2016) presented a Singapore case. Singapore is another country that have a low individualistic profile. Singapore's individualistic rank is 58-63 (Hofstede et al., 2010). Luo and Yeung (2016) found conceptions of learning 'incremental learning' and 'cooperative learning' dependent on students' self-construal. Interdependent self-construal predicted students' incremental learning conceptions. On the second level these incremental beliefs determined competitive and cooperative learning conceptions. Interdependent self-construal emphasize self-definition in relation to others, and it is expected to prevail in collectivistic societies. Whereas, independent self-construal is a characteristic of individualistic cultures. Thus, there are inter-cultural variations in students' conceptions of learning concurrent to individual and collectivism dichotomy of cultures.

Purdie et al. (1996) compared conceptions of learning of Japanese and Australian students. Australia is individualist and Japan is a collectivistic society. However, study of Purdie et al. (1996) nullified stereotype about Asian students. Japanese students' conceptions of learning were broader and reflexive than Australian students. Australian students' conceptions were largely confined to reproducing and memorization. The Japanese students' conceptions of learning were more sophisticated than their counterpart, and ranged from increase in knowledge to personal fulfilment.

The study of Purdie et al. (1996) reveals that individualist and collectivist dichotomy universally cannot predict and indicate conceptions of learning. As a whole a society may be individualistic or collectivistic. But there may be certain facets of culture such specific cultural values, religion that may distort the expected universality of individualistic- collectivistic dichotomy. The individualistic-collectivistic status is a dependent variable (Voronov & Singer, 2002), which only can indicate societal characteristics to a limited extent.

Collectivism Culture, Teaching and Learning Behaviours in Pakistan

South Asian countries are also at the bottom of individualistic ranking and scores (Hofstede et al., 2010). However, there is no research on this issue in South Asian cultures especially in Pakistan. Pakistan is a proponent of collectivism culture (Hofstede et al., 2010), discourage individualism, and currently suffers terrorism and extremism. Most students memorize the content in secondary schools (Aijaz, 2001; Akhtar, 2007; Malik, 2012; Shaheen, 2010) and there are teacher centered teaching methods (Khan, 2011; Malik, 2012; Pell et al., 2010) that have potential to promote intake of knowledge conceptions of learning in students (Vermunt, 2005). Male students in schools appear less successful than female students do (Ho, 2012; Khan et al., 2014; Khilji & Bhutta, 2012; Shah, 2011) in this teacher centred and knowledge testing assessment system (Bibi, 2012; Hasan, 2011; Malik, 2012) specifically in science discipline (Punjab Development Statistics, 2014). Malaysia, another Asian country, proponent of collectivism culture share same trend of better female performance too (Muhamad & Ong, 2011; Teoh et al., 2013). Malaysia is a Muslim majority and collectivistic culture (Hofstede et al., 2010). Therefore, it was appropriate to explore the Pakistani male science students' conceptions of learning to understand their poor performance in schools.

RESEARCH QUESTION

Overwhelmingly, quantitative approach is used to explore students' conceptions of learning at various levels and stages of education. Therefore, qualitative approach seems appropriate to reveal Pakistani male science students' conceptions of learning. Present qualitative study was intended to answer following question:

- 1) What were Pakistani secondary school science students' conceptions of learning obvious in their views?

MATERIALS AND METHODS

Epistemological Standpoint

Ethnographic studies provided a way to explore and understand shared beliefs and standpoints of a narrowly or broadly bounded social class and social group in a culture (Creswell, 2012). The current study aimed to discover

low income students' views of their learning at public schools. It has necessary elements of ethnographic enquiry. Simplest form of qualitative research analysis 'applied thematic (Guest et al., 2012) used, came up with categories (Javadi & Zarea, 2016) in students' conceptions of learning. A type of qualitative approach, namely theory driven approach (Howitt & Cramer, 2008) was opted and a theory of learning patterns (Vermunt, 2005) was used to categorize and summarize students' viewpoints of their learning process. This theory provided an avenue to analyze and categorize students' views of their conceptions of learning into defined categories of (Vermunt, 2005).

Population and Sample Selection

Literature helped to identify male secondary school science students as population of the study. Because, male science students in public schools exhibited high failure rate and showed inappropriate dispositions. Thus, male science secondary students were opted as the population of the study. Additionally, students' from poor socio-economic background, having past learning experience in public schools, were the criteria to select population of the study. By applying a narrowly framed ethnographic research design (Creswell, 2012) male secondary schools science students in districts of Punjab from Punjabi ethnic group were identified as population of the study. The purposive sampling technique opted, led to selection of 48 students for this research activity.

Data Collection and Analysis

The narrowly bounded ethnographic research design and purposive sampling ensured the possibility to form homogenous groups for conducting focus group interviews. Before starting data collection and interview sessions, first author of the study spent two weeks' time with potential interviewees during conducting another study about validation and adaptation of research questionnaires. This helped the students to be comfortable and open to first author of the study during interview sessions. This also helped the researcher to understand interviewees in their context and setting. Researcher provided sufficient information to the students' parents helps them to have knowledge able decisions for participation of their children in this study. Afterwards, written consent was sought from the students' parents to take part as volunteers in focus group interviews. Final interviews were conducted after pilot testing of designed interview schedule. Time required and possible problems detected in pilot testing on representative sample of the study were countered during final focus group interviews. Six students were selected in each focus group interview. It took 40 minutes on average to complete each focus group interview. The interviews were conducted in Urdu language and later verbatim were translated into English for research publication and data analysis purpose. The qualitative data analysis software NVivo 10 was used to manage and arrange data into distinct categories and themes. The outline to conduct thematic analysis (Guest et al., 2012) was according to subsequent steps defined by Braun and Clarke (2006). Being having a keen interest and motivation, the researcher personally carried out the focus group interviews. This practice enhanced researchers' understanding and familiarity with interview data. Themes, sub-themes and sub-sub themes congruent to the defined categories and concepts underlying theory of learning pattern were identified from the qualitative raw data after reading and re-reading. Important decisions about sample size, finalizing interview protocols, data collection and analysis were settled in peer debriefing sessions to ensure rigour and trustworthiness in research (Ely, 1991).

Following questions were asked to the students to explore their ideas about their learning in focus group interviews:

1. How do you know you have learned something?
2. What you do to understand something?
3. What is learning?

Researchers choose theory driven coding referred as Template Coding (Blair, 2015). Researchers identified and used priori codes derived from the theory of learning patterns for different conceptions of learning. However, different concepts, associated categories and themes recurrent in the data are represented in [Table 1](#).

Table 1. Summary of Coding Structure/Coding Frame for Students' Conceptions of Learning

Research Questions	Associated Concepts	Categories
How do you know you have learned something?	1) Able to recall, 2) able to write after drill/rehearsal, 3) reproduce information to teachers and others, verify memorized by writing it on notebook	Intake of knowledge
	1) Seek indication from others to verify my learning, 2) Others do not tell any error in my learning and understanding 3) other affirm memorization and understanding.	Cooperation
	1) learned that thing can solve that problem, 2) Can do a practical, 3) can do that by self	Use of Knowledge
What you do to understand something?	1) Can solve a similar new problem, 2) can explain topic in my own way.	Construction of Knowledge
	1) Read books, 2) read and re-read, 3) Rehearse or drill that information 4) rehearse word to word 5) enhance understanding by repeated readings, repeat the things in book until I know I have memorized it very well.	Intake of Knowledge
	1) Seek help from the teacher, 2) get help from some elder, 3) unable to find or understand the meaning of any word, 4) ask the teacher for help, 4) Rely on human sources for learning rather than cognitive and other self-study sources. 5) Prefer to ask others to get their help to understand words in book.	Cooperation
	1) Try to do practically apply the information we read in book	Use of knowledge
	1) Explain things according to our own experience and understanding. 2) summarize the information in book in my own words	Construction of Knowledge
What is learning?	1) Acquire knowledge, 2) memorize knowledge, 3) Reproduce the information from the book when needed	Intake of Knowledge
	1) Others affirm you that you have learned something, 2) learning is to understand a topic with the help of others.	Cooperation
	1) To use the knowledge in practical situations, 2) acquiring knowledge that you can use in everyday life, 3) Acquiring skills to the level to apply in practice.	Use of knowledge
	1) Drawing meaning from the experience, 2) Describe the knowledge one's own words	Construction of Knowledge

RESULTS

Two types of conceptions of learning 'intake of knowledge' and 'cooperation' emerged as the two major types of learning conceptions in Pakistani secondary school science students congruent to collectivistic society in Pakistan. It is noteworthy that obedience, taking things without question and going with group. The underlying nature and influence of society in their views is identifiable in their views. The conceptions of learning "construction of knowledge' and 'use of knowledge' showed an initial stage of development in their views, however, majority of students appeared to bear conceptions of learning not supportive to deep and meaningful learning.

In line to the mainstream literature (Watters & Watters, 2007), the intake of knowledge was an obvious and recurrent conception of learning in Pakistani secondary school science students. Students conceived learning to memorize facts. Thus, ability to memorize seems more important for success in examinations and learning at school. They were having a narrow concept of memorization strategy and were limited to use rehearsal and drill as strategy of cognitive processing to memorize information and facts taught at school. The conception of learning as accumulation of information as conception of learning was present in students' statements. Students described the knowledge of textbooks. Students described knowledge gain as the expected outcome of their learning. The old and ancient concept of memorization of books was detected. Even in future, they expect to read book and accumulation of knowledge appear as only way to earn respect and success in society in following way in views of one respondent

"We get knowledge; Knowledge will help us to earn a good job. Society respects a man who has Knowledge. Books have all forms of knowledge. When we read books, then we get this all forms of knowledge. We will have to read more advance books in future, and after reading these books, we will accumulate more in knowledge in coming days. In this way, we will have so much knowledge that our society will respect us."

The student linked the quantity of knowledge and information as requirement to gain a good job and respectful status in society. He ignored the affective and psychomotor aspects of learning which are associated to deep learning. The student conceived that accumulation of knowledge could guarantee him a good job. He believed that people who have a higher education retain and accumulate a large volume of knowledge. Likewise, another

respondent highlighted the role of teachers in the development of their conceptions of learning 'intake of knowledge'. The student memorizes the information in book to reproduce it to teachers. The student expects that teacher will reaffirm whether they have memorized something or not.

"We come to school, and we open the book and we memorize whatever our teachers assigned us. Later, we make it heard by the teacher, and the teacher check homework. Afterwards, whatever teacher assigns as a future learning task, we memorize that one."

Here the role of teachers appears as a factor to strengthen and reinforce students' conceptions of learning. It also indicates the teaching learning activities carried out in classrooms, which are textbook readings and drill of textbook passages from books to reproduce facts to teachers. In the above verbatim, students used the Urdu word sunana (سنانا), which is exactly translated as reciting in English. The above passage reflects activities going in classroom in three steps: reading assignments/ rehearsal/reproduction.

Students conceived rehearsal strategy as the only way and strategy to accumulate information. They are in a passive position, and they ensure intake of knowledge through memorization of facts. They considered their responsibility an exact recall of information. They heavily rely on drill: verbal and written drill of text from book to enhance memorization of facts or textbook material. In following verbatim, students used the Urdu word parhna (پارھنا) meaning (reading) instead of Urdu word sekhna (سکھنا) meaning (learning) to express connote their learning textbook.

"whatever we have to read (meaning pardna/sekhna) from the book, we keep that one reading and re-reading, and when we feel that it is saved or stored in our mind by this drill then we assess the memorized content by writing. In case, if we mistake in written, then we re-read or repeat that again, and rewrite that again. We keep on writing and rewriting, until we become able to write entire lesson correctly. After that, we assume that we have memorized textbook content and we done our job."

Students pointed out this practice to describe memorized information to others to ensure exact intake of knowledge. If they exactly state memorized information to others, they become sure of their learning of textbook content. Describing the information to others, they feel satisfied because others verify that they memorized the facts.

"We read a lesson from book for a short while, then, we state/describe memorized lesson to the elder brother or a teacher. If he says or verifies (by listening us) that, we have memorized textual information, then, we become certain that we have learned that lesson in a good way."

Few students indicated an intention to understand the content. However, they reported effort to understand content after memorization. In other way, the temporal position in understanding after the memorization intent. This situation is a form of memorization (Biggs, 1998; Kember, 1996; Prosser & Trigwell, 1999). This reflects intake of knowledge conceptions of learning.

"We should affirm learned information by writing it four or five times. Drill that one repeatedly, and later we should understand things, and should describe it to the teacher in the next morning."

In above, verbatim, memorization is by drill strategy, and an intention to understand comes later. It is usual Asian behavior reported by Biggs (1998). If there would be a reverse order, then that would not memorization; effort to understand followed by memorization (Biggs, 1998).

Pedagogy in schools appear as a factor to support students' intake of knowledge conceptions of learning. Different components of pedagogy such as discipline of study, teaching approach, and assessment ways regulate students' conceptions of learning. Teachers' identification of text limits students' understanding level. Teachers expect students to describe bookish selected knowledge or information to them. Students' expectations are teachers mark their lessons to memorize and if they describe the lesson literally word by word to teachers. They think; they are successful. The teaching strategy adopted in schools seems the probable cause for development of intake of knowledge conceptions of learning in Pakistani secondary school science students. Students' responses depicted teachers' practices to encourage students to memorize and reproduce information in the class. Such like is evident in the following excerpt.

"The lesson assigned by the teacher should be marked on the book. We should memorize it, and later we should write it. If, a man would memorize it well, then he would be able describe it to teacher in morning."

Most of students were unable to differentiate between memorization and understanding of information. Students perceived reproduction of information and understanding similar and thus they described they have

memorized the information it means that they understood the information. When they were asked to describe their concepts of memorization and understanding in operational form. They described same set of cognitive processing strategies in same sequence of cognitive processing strategies as like memorization. It appears far ahead to expect them to have construction of knowledge and use of knowledge conceptions of learning. They operationalized the memorization and understanding in terms of same cognitive processing strategies. Although, students did not effort to understand the meaning of the information. The strategies of analysis, highlighting, summarization, concept mapping were not traced in their verbatim. Following excerpt pointed the students' confusion and misunderstanding about the understanding and memorization conceptions.

"If someone has memorized information then he would tell the meaning of the text."

Likewise, one student commented in following words:

"First thing is that brain grows and develops with its use, and it does not reduce. Therefore, first, someone should be able to read. Later, after reading, someone should memorize. Afterwards, he should describe the memorized information to someone, and afterwards, he should write it. In this way, we will know that we have memorized something properly, and that is correct as well."

Here the students elaborated the use and misuse concept of mind. However, they are not aware of the method to use mind. However, students' are unaware to the cognitive strategies that can ensure effective use of cognitive resources. They are aware to only drill or rehearsal strategy of memorization. The sequence of conceived students' learning process is something like; reading-drill/rehearsal-written production- memorization.

The cooperation conceptions of learning originated from collectivistic cultures. Pakistani culture being a collectivistic society promotes interdependence and students seek help from others to verify their learning. They have expectations from others (teachers, friends, family members) to help understand learning materials taught at school.

The cooperation conception of learning was also much obvious in students' views. Students did not own a sense of self-responsibility to understand, explain, and elaborate the information. They look like depending others for explanation and elaboration of information. They believe that teachers, family members, and seniors can explain and elaborate the content. In this way, students fail to appreciate the role of self-effort to understand content in their learning process, which is usual in individualistic cultures. They accept explanations and elaborations from others. This indicates omniscient authority epistemological beliefs, which prevail in majority students of Pakistan. The following excerpt explained students' passive role in the learning process. In the following verbatim, student does not believe in consulting the dictionaries and other sources to understand the meaning of difficult and unfamiliar words. Here students have dissonant concepts of understanding. He relies on translation and to him to have information is understanding. So students after translation from book of English. Things he has understood the information. He considers ability to translate as having understanding. On the other hand, he believes in definitions and explanations from teachers and elders.

"We read the words (in book), and if we do not know the meaning (of words), then we ask somebody to elaborate it for our understanding. In this way, we read after understanding (translation). Moreover, whatever we find difficult we enquire it from others."

The students wherever in their verbatim, talk about reading; they talked about reading words instead of stating reading concepts, themes. Which also convey their approach to absorb words rather concepts. In other way, they appear interested only in information, words instead of concepts and comprehension of information. Similarly, one student explained the self-made levels of seeking cooperation from others. The teachers appear at the final and ultimate ladder of cooperation. First, the students believe in seeking help from their fellows, then elders, and family members and at the end from the teachers.

"If we fail to understand some passage from the book, then we will understand it with the help of some friend or fellow. If our friends and fellows fail to elaborate it to us, then we will ask to some senior fellow or the teacher."

Students believed and relied on teacher explanations. They believe to get continuous help from teachers to comprehend and understand the information. They are not eager or ready understand the content at their own. Similar situation is depicted in following excerpt:

"If we fail to understand something, we go to the teacher, and get it explained by him. The teacher makes everything clear to us. If still we fail to understand, we go again to get help from that teacher."

The traces of construction of knowledge and use of knowledge conceptions of learning were at beginning stages in some comments of few students. One student realized learning as the process of ability to use knowledge. He differentiated learned and unlearned man in terms of their ability to use knowledge in situations that demand some kind of practical activity.

"A technician can only fix something because he has learned that one already. However, any untrained man cannot fix anything at all."

'Construction of knowledge' conception of learning was less obvious. One Students assume experiments as a way to promote construction of knowledge in students. He thinks experiments help construct own meanings.

"In case of science subject, it is crucial do experiments. From experiments, it becomes clear that this thing was like this and that. This leads to full understanding of anything."

DISCUSSION

The teacher centered education system in Pakistan (Malik, 2012), knowledge assessment approach in examinations (Bibi, 2012; Hasan, 2011), of lower socio-economic background students in public schools (Malik, 2012), high failure rate in male science students (Punjab Development Statistics, 2014) and collectivism social system in Pakistan (Hofstede et al., 2010) supported intake of knowledge and cooperation conceptions of learning. These appear to be the characteristics of Pakistani science students at secondary school level in this qualitative study. The presence of intake of knowledge as the pretty common conceptions of learning in Pakistani schools is congruent to the study of Watters and Watters (2007). They found most of students in their study holding the intake of knowledge conceptions of learning.

The prevalence of intake of knowledge and cooperation conceptions of learning is explainable in context of Pakistani education system and teaching learning practices. It is understandable by looking state of affairs in science education at secondary school level. There is teacher centered education system in Pakistan. Teaching and learning practices in Pakistani secondary schools in general and particularly for science teaching lack the infusion of modern student-centered teaching and learning approaches. The teacher centered teaching activities and information testing examinations in Pakistani education system at secondary school level inhibit the development conceptions of learning such as construction of knowledge and application of knowledge (Richardson, 2007; Vermunt & Vermetten, 2004).

The social and cultural factors also encourage the intake of knowledge and cooperation conceptions of learning. The population of the study was from lower socio-economic background. This socioeconomic background is linked to undesired conceptions of learning (Rosário et al., 2014). The study affirmed the findings of Rosário et al. (2014). They found intake of knowledge and cooperation conceptions of learning in gypsy children who were from lower socio-economic background like the students in sample of current study. Different socioeconomic background could result into different types of conceptions of learning (Richardson, 2010). Even, African and Asian minority students in developed countries for example in United Kingdom, owned intake of knowledge conceptions of learning more than white majority European origin students (Richardson, 2010).

Apart from other educational problems, students from lower socio-economic background have high failure rate. Their conceptions relate to their social background too. Additionally, the higher failure rate at secondary school level in science education in Pakistan (Bahawalpur, 2015). This is explainable in perspective of revealed intake of knowledge and cooperation conceptions of learning. These conceptions of learning are linked to poor academic performance in schools (Vermunt, 2005). Therefore, poor academic performance in Pakistani secondary school science students is the result of their intake of knowledge and cooperation conceptions of learning.

If we review the link between these conceptions of learning and high failure rate, we found memorization and drill cognitive processing strategies linked to intake of knowledge and cooperation conceptions of learning (Vermunt, 1996). There is massive memorization and reproduction behavior in different levels of education in Pakistan (Aijaz, 2001; Akhtar, 2007; Shaheen, 2010; Ullah et al., 2013). It is also explainable in perspective of the Pakistani students' conceptions of learning. The higher levels of memorization and drill practices in Pakistani students revealed in the different local studies (Aijaz, 2001; Akhtar, 2007; Shaheen, 2010; Ullah et al., 2013) implicitly refers the presence of intake of knowledge and cooperation conceptions of learning. In this way, the current qualitative study affirms these studies, which implicitly indicated presence of intake of knowledge and cooperation conceptions of learning in Pakistani students.

In short, intake of knowledge and cooperation conceptions of learning negatively affect students' academic performance; hinder the development independent learning behaviour (Vermunt, 2005; Vermunt & Vermetten, 2004). These lead to poor understanding of different educational concepts taught in schools. There is presence of these conceptions even at any modern teaching learning context (Minasian-Batmanian et al., 2006; Vermetten et al.,

2002; Watters & Watters, 2007). Accordingly, the 21st century dream of development of students' lifelong learning skills in educational institutions cannot be realized due to the lack of these conceptions of learning (Zimmermann, 2002).

Intake of knowledge and cooperation conceptions of learning appears as the most obvious conceptions of learning in Pakistani secondary school science students enrolled in public schools. Pakistan is a collectivistic society, and conceptions of learning appeared through this study, are naive to the high level which is not found in other collectivist cultures. The range of conceptions of learning in South East Asian collectivistic cultures is broader than Pakistani students (Kember, 2000; Kember, 2016; Liem, 2016; Luo & Yeung, 2016; Purdie et al., 1996). However, Pakistan is at the bottom of individualistic scores and ranks (Hofstede et al., 2010). Pakistan is an example of extreme collectivist culture. Another reason for these naive conceptions of learning is vested in the history of Pakistani education system. Pakistani students from the very start are accustomed to memorization, children follow the tradition of memorization in their religious education to their school education (Rugh, 2012). Dull and teacher centered education system strengthens and reinforces students' intake of knowledge behaviors (Malik, 2012; Malik, 1997). Modern teaching and student centered teaching methods positively associate to promote construction of knowledge and use of knowledge conceptions of learning. However, these modern student-centered teaching practices are extinct at the secondary school level for science education in Pakistan. This scenario prompted development of intake of knowledge and cooperation conceptions of learning. These conceptions of learning linked to undesirable indicators of academic performance require radical reforms in teaching learning practices in Pakistani schools. These reforms have unnegotiable demand to counter the ill effects of poor conceptions of learning process because of traditional teaching and learning practices in Pakistani schools. Moreover, interventions seem inevitable option to inculcate desirable conceptions of learning in students.

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