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An Analytical Study of Learning Styles and Achievement Motivation of Students at

Secondary School Level

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Abstract

The present study was aimed to examine different learning styles of the students and level of students' achievement motivation at secondary school level; investigate the relationship of learning styles and achievement motivation of students at secondary school level. A multilevel mixed-method sampling technique was used. A total of 250 male and 250 females students studying in public sector schools located in Tehsil Rawalpindi were taken as a sample of the study. The study was descriptive in nature. Data were collected by using two questionnaires. Learning Styles Questionnaire based on the theory of Fleming's VAK Model (2001) and a questionnaire regarding achievement motivation based on McInerney's (2003) theory. Collected data were analyzed by using descriptive statistics; by using mean scores and inferential statistics; by using Pearson-Correlation. Major conclusions of the study showed that visual and auditory learning styles were the most favorite learning styles of the students and students were found often motivated to their achievement. Furthermore, there was a significant positive relationship between learning styles and students' achievement motivation. There was a significant positive relationship between the two components, visual and auditory learning styles of the VAK Model with that three components, social, mastery, and performance goals of achievement motivation. Based on conclusions, the following recommendations were made; the teacher may use audio-visual aids and hands-on practices in class. Moreover, this is the obligation of teachers to motivate students by fulfilling their social, mastery and performance goal.

Keywords: Learning Style, Achievement Motivation, 'Visual, Auditory, Secondary School Level **Introduction**

A widespread issue in the educational field is to empower the quality of education at all levels. It is not imperative only to strengthen the quality of education at a basic level but it also needed that education may amplify the individuals for the basic living arts. Learning has become a critical issue for psychologists and educational leaders. The roots of educational improvement lie in taking into account how individuals learn. Many of the efforts are made for the advancement of students' academic achievement. The focus of devoted teachers and parents has always been on the success of their children. Keeping in view all these, most of the teachers are agreed upon the fact that their students must have a positive attitude to excel in their academics. Their learning style is considered a determined strength for their academic achievement. To trace the connectedness of learning styles and students' academic performance is a thought-provoking issue that needs to be tackled. Researchers are not concise on If there is or not any connection between learning styles and academic performance. Besides this, another group of researchers goes against this idea. If a person knows what type of learning style is preferred by the students, It aids teachers to teach effectively. To perform students influentially in the classroom, learning styles play an important role (Cassidy, 2004).

Numerous research studies have been carried out in Pakistan to distinguish learning styles that are on the top priority of students. These researches will also be carried out to illustrate so many components that are influential for students' academic achievement.

Significance of the study

Teachers and students must assess the learning styles and achievement motivation of students of secondary school level. It may encourage the educators in curriculum development and administering

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correlated assessment. The findings and conclusion of this research study give an insight into educational planners, administrators, and policymakers towards quality education at the secondary school level. This research study will be beneficial for all the DEO's and EDO's. To train teachers, this study will deploy the educators to know-how regarding their teaching which is influential for their students. For planning, organizing, and serving good direction on the lines that enhance students' learning this research study will be proved a helping aid for the educators. This will also be ample for coming researchers in the field of education.

The present study is conducted to discriminate students' preferred learning styles and their level of achievement motivation. Furthermore, this study is conducted to give a clear picture of the interconnectedness of the students' preferred learning styles and their level of achievement motivation at the secondary school level.

Research Objective

- This study was intended to;
- 1. Determine the learning styles of students at the secondary school level.
- 2. Investigate the level of achievement motivation of students at the secondary level.
- 3. To find out the relationship of learning styles and achievement motivation of students at the secondary school level.

Null Hypothesis

- H₀₁: There is no significant relationship between learning styles and achievement motivation at the secondary school level.
- H_{01a} : There is no significant interrelationship of three dimensions of the VAK Model including visual, auditory, and kinesthetic and that of three dimensions of apprentices' achievement motivation includes performance, social, and mastery goals correspondingly at secondary school level.

Review of Literature

Learning occurs as a relatively permanent change in behavior. This change depicts in the shape of receiving information, comprehending or taking the art by experiencing on oneself. This change also consisted of study, training, examination, or performance. In the viewpoint of Parson (2001), what learning serves that it receives knowledge related to facts, ideas, and belief. He believes that in all living organisms learning is a shifting of behavior. He further described that this shifting in behavior is long-lasting. It is also a reasonable shifting of behavior that is consequential of practice or experience. This notion of learning testifies that learning is shifting behavior (good or bad). It occurs as a result of exercise/ practice. Lastly, it is comparatively everlasting. Learning consequently occurs as an everlasting shift. This shifting recurrence is positively or negatively with the mean of experience. To seek and improve learning, cognitive and emotional influences are also considerable. Learning is also highly influenced by the environment. Learning is also valuable for the modification of a persons' knowledge, skills, ideas and belief and capabilities and his vision regarding the whole world (Illeris, 2000). Learning style is exemplified as the learners understanding and giving meaning to the environment in which the learner surviving. This is also a matter of learners' reaction and understanding of the learning process (Eden & Altun, 2006).

The root of the notion of learning style lies in the 1970s. This notion of learning styles got its remarkable identification. Educationists are not succeeded in defining this notion of learning styles. Numerous researchers have illustrated it uniquely. Although, all the educationists are meet on one point that this learning style is referred to as a way of learning where they preferred information in a learning scenario. Feldman (2004) exhibited that learning styles are how learners seek, apply and think information. The major attention learning is individuals' different ways of gaining and retaining information. Every person is different in dealing with his situation. Felder (2005) illustrated that learning style has different categories. Major attention is given to a variety of information. Then attention is awarded to their strength of handling received information in so many ways. There is a variety of learning styles. This scene of variation of learning style in people is admitted very imperative in the area of education (Canavan, 2004).

The list of several models, applied for reflecting learner, is so long. Most commonly and generally analyzed among numerous facets of learning style is Fleming's (2001) VAK (Visual, Auditory, Kinesthetic) model of learning style. The root of this model generates in 1920. The emergence of the VAK learning style model drew major attention. This model proved to help aid the

teachers to assess what is students' preferred learning style for effective learning. According to this model visual learners are those types of preferred to learn by using their sense of sighting. Their knowledge is long-lasting when they receive it by using their sense of sighting. The helping material for their learning includes a diagram, photos, and flashcards. Alum ran (2008) investigated that almost 65% of the population was visual learners. Visual learners found difficulty in comprehending words or instructions that are given them verbally. It is complicated for them to follow lectures. They cannot interpret or reproduce spoken phrases. Visual learners use visionary sense for the perception and organization of knowledge. These types of learners make progress in their learning by reading or through observation. These learners give importance to the appearance of the word instead of how they are arranged or places for producing sound. A few of the commonly used features of these learners are; For learning, such learner gives preference to books, magazines, and something in written form. It is their choice to study in peaceful circumstances. Such types of learners keep themselves writing lectures. But when they are not successful in writing the full lecture, it causes frustration for them. It is easy for the visual learner to utilize knowledge, facts, and ideas when it is in written form. It is easy for them to give concentrate with the help of sighting material. Such types of learners have excellent spelling power. These learners learn best through drills given to them by verbal instruction. Trainers' body gestures and facial expressions are important for such learners in their learning.

The type of learner preferred to learn with the help of hearing materials are auditory learners. One of the research study established by Morrison. et.al (2010) exhibited that almost thirty percent of the population encompassed auditory learners. This type of learner feels comfortable in verbal lessons. They are in favor of discussion, conversation, and listening to the sayings of other people. These learners read text loudly and comprehend it effectively. Auditory learners have the quality to comprehend the meaning of any spoken word with the help of listening to others. They can judge the root meanings through the voice tine. For the advancement of knowledge, these learners use video or audiotapes. Such type of learners reflects the following typically adopted characteristics. Such types of learners usually spoke in a classroom setting without any hesitation. The main sources of their learning are audio, tapes, and lectures. They are in favor of presenting things orally and are making their ideas by following instructions given to them verbally. They receive more and more information when they heard it instead of written material. These learners ate influenced by things presented to them verbally. Music amused the auditory type of learning. These learners feel satisfaction in discussing and debating things. Auditory type of learners feel comfortable and enjoy discussion and conversation with other people. These types of learners use the drill method i.e. they speak out knowledge given to them again and again for grasping it. It is not easy for such learners to remain peaceful and calm for a while. Lastly, auditory learners have a very good power of memorizing words and names(Morrison et al, 2010).

Another type of learner is kinesthetic learners. Such types of learners make their learning effective and long-lasting by using hands-on activities. They grasp the concepts by acting or moving. Such learners can't stay or be in a static position for a long time. The main tool for getting such learners are experiences, touch, and act. They like to be vibrant and dynamic in the whole learning setting. While talking, these learners are frequently in the habit of touching others from the shoulders or holding someone's hand. Their body gestures exhibit a lot of things. Such learners have some specified characteristics as; this type of learners are in favor of learning/grasping by action, experiences, and functioning related to body movement. These learners manipulate things to retain knowledge. Hand-on teaching techniques are the soul of handling such learners. The handwriting ability of such a learner is not so good. Moreover, these learners do not feel difficulty in learning spellings. Their spellings power is booming. They have very good command over communication. Such learners talk fast. Such type of kinesthetic learners learns best when they are put into a situation of role-playing. These learners want to work in an amusing environment. Like background music boost up their energy to study or work. Such learners are not comfortable working continuously for a long time. These learners need short intervals after some work. Such type of kinesthetic learners fed up with long lectures. These learners are stressed by long lectures. These learners work in a friendly environment and mixed up with fellows (Oxford, R.2001).

Literature that deals with psychology usually elaborates the act of persons' motivation to achieve motivation. If a person is aware of his action/moves, it will be the symbol of gaining

everlasting knowledge. This will leads to achievement in form of hard work and them completing high-level intellect (Stipek, 2002). In a similar manner learner/pupil modify their innate power which is helpful for them in their dealing with people properly and effectively. They respond to their routine life experiences and complication with which they are coping in their learning. This notion of learners' capability of managing their life experiences and a proficient understanding is regarded as achievement motivation (Dowson, 2001).

On the grounds of developmental research, explorers classified the person holds an intense urge to achieve what is not possible for others to achieve. The role of achievement-motivation in an organism is a psychosomatic force. The force is also elaborated as an individual's determination to achieve something and to enhance his/her method of learning (Carter, 2000; McInerney and Dowson, 2003; Murphy & Alexander, 2000; Paul Pintrich, 2000; Thomson Zenzen, 2002). The concept exhibited by the theory of goal line is that a situation is created in which individuals have to be motivated. According to this theory, in real setting achievement motivation is a psychosomatic force that is internal of a personage. This force is considered a person's ability to achieve something. It also empowers a personage to expand his/her manner of learning (McInerney, 2001). There was no ambiguity in it that all the trainers are design to achieve motivation as all the organisms are designed by some extent of attainment motivation. An intensity that present a personage internal for achieving something is presented to our happiness and satisfaction for achieving (Dowson & McInnerney, 2003). McInnerney (2003) proposed theory of achievement motivation. The notion related to the personages' condition of unusual perfection controlled by feeling is considered as achievement motivation. All the bodily contentment, appreciation, and a craving for achieving incentives, all are its component (Murphy & Alexander, 2000).

On the ground of achievement motivation, there are three types of goals. Firstly there are mastery goals. These goals are also regarded as learning goals. The major attention of these goals is basically on the attainment of expertise or forming mastery in handling novel clumps of knowledge, ideas or belief, or capabilities. Besides this, there are ego-related goals. These goals performance goals. These goals are also regarded as ego-related goals. These goals emphasized achieving essence values that are built on norms, putting efforts for the best. Instead of putting efforts that fit the end, social goals exist. These are in form of the relation of individuals (Adam, 2011). According to the concepts of goal-line theory, a situation is created in which individuals are motivated to tackle it. Individuals are kept far off from failure. It is the essence of performance goals. On the other hand, they are put into a situation to attain accomplishment. This is the essence of mastery goals. This situation is the development of the expertise of an individual. In this situation, learners also gain a lot of knowledge and make their concepts clear (Murphy & Alexander, 2000). There is an accomplishment regularly. This accomplishment is created by the pupils themselves who chase the goals. They consider themselves successful when they are successful in their mastery goals. Mastery goals have positive effects on teaching and motivation. These goals are also interconnected with upper-level intellectual work, a high degree of self-praising. These goals are also influenced to see to achieve targets and solving problems. Some aspects of performance goals are that people have craving for positive judgment and not bother for unfavorable judgment of their expertise and their worries (Murphy & Alexander, 2000). The main functioning of performance goals is the idea of receiving the accomplishment of other people as the performance of their own. Giving importance to the accomplishment and the act of letting it can be seen in this explanatory lines of goals exert a pull on the researchers. There is the interconnectedness of goals that demand activity i.e. performance goal and that of intensive grades of attainment. But such goals are not so much at a high level of learning. These are considered just a normal level of learning goals. These goals are the basis for an extrinsic incentive (Midgley, Kaplan, & Middleton, 2001). A situation in which personages do not adopt performance goals, then they have negative effects on the behavior of achievement seeking. This absence of behavior of performance goals results in false conception, poor withholding, and personally full of mistakes, motor techniques like not making a timely decision and not willing to let others for cooperation(Midgley & Urdan, 2001). It is important that in a concentric point where classroom setting is countable, required technical advancement that is helpful for educators' interconnectedness in task considering achievement situation. The proven approaches exhibited that these ideas are the cause of eagerness usually this happened that the recent complained difficulty of a motivation in people to attract the somatic setting (Murphy & Alexander, 2000).

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Keeping in view all this situation the researcher conducted this research study. The purpose of the study in the researcher's mind was to find different learning styles of students at the secondary school level. Intentions were also to analyze the level of achievement motivation of students at the secondary school level. Moreover, the researcher broadened the research study to assess the interconnectedness of learning styles and achievement motivation of students at the secondary school level.

Methodology

The study is quantitative in nature. The population of the present research study was 192 males and 173 females. All these schools were of the public sector secondary level. The location of all selected schools is Tehsil Rawalpindi. Total 5212 male and female students were taken as the population of the study. 25 male and 25 female public sector schools were selected. From these schools, 250 male and 250 female students were selected randomly. Ten arts students from class 10th were selected from each school. Pilot testing was done to check the reliability and validity of questionnaires. The reliability of VAK was measured on Cranach's alpha and it was .67 and the reliability of achievement motivation was 0.88. To gather data, two questionnaires were employed. To get opinions related to learning styles, VAK(2001) learning styles questionnaire was used. Another questionnaire was administered for getting an opinion about the achievement motivation of secondary level school students. This questionnaire was based on the theory of McInerney (1997). Both instruments, VAK LSQ and SAM Scale consisted of 15 items on a 5point Likert scale.

Theoretical Framework

The present line of investigation was based on VAK ways of erudition of students. The VAK learning styles model by Fleming, Neil (2001) recommends that usually, it is possible to divide the learners into three classes; visual, auditory, and kinesthetic learning styles. Secondly, this research study was concerned with the achievement motivation theory developed by McInerney(1997).

RESULTS

Table 1

Collective means of different learning styles at secondary school

Sr. No.	Variables	Mean Remarks	
1.	Visual learning style	3.80	Sometimes true
2.	Auditory learning style	3.80	Sometimes true
3.	Kinesthetic learning style	3.15	Often true

Table 1 shows that most of the respondents preferred the learning styles as visual learning style and auditory learning style as compared to kinesthetic learning style.

Table 2

S.No.	Variables	Mean	Remarks
1.	Social goals	3.85	Often true
2.	Mastery goals	4.25	Often true
3.	Performance goals	4.13	Often true
4.	Achievement Motivation	4.07	Often true

Table 2 shows that most of the respondents achieved their level of motivation when their mastery and performance goals are fulfilled as compared to that of the social goals.

Ho₁: There is no significant relationship between learning styles and achievement motivation of students at the secondary school level.

Table 3

Relationship of learning styles and students	' achievement motivation at secondary school level
<u>(N=500)</u>	

Group	Ν	Mean	r	Sig	p-value
Learning styles	500	3.52	0.212	.000	D <0.01
Students' achievement motivation	500	4.08	0.512 .000	P<0.01	

** Correlation is significant at the 0.01 level (2-tailed).

Table 3 shows that learning style was significantly correlated with students' achievement motivation at secondary school level, $r=0.312^{**}$, (P<0.01). This result shows that the null hypothesis that" there is no significant relationship between learning styles and students' achievement motivation at secondary school level" is failed to accept.

H_{01a}: There is no significant interrelationship of three dimensions of the VAK Model; visual, auditory, and kinesthetic with three dimensions of achievement motivation; performance, social, and mastery goals of students at secondary school level.

Table 4

Interrelationship of three dimensions of VAK Model i.e. visual, auditory, and kinesthetic with three dimensions of achievement motivation i.e. performance, social and mastery goals of students at secondary school level.

Variables	Visual Learner	Auditory Learner	Kinesthetic Learner
Mastery Goals	0.217**	0.256**	0.001
Performance Goals	0.275**	0.115**	0.101
Social Goals	0.213**	0.305**	0.157
Achievement Motivation	.312**	.276**	0.115

Table 3 shows a significant positive correlation of visual, auditory learning styles with mastery goals, performance goals, social goals, and achievement motivation. Whereas, it depicts that kinesthetic learning style is negatively correlated with mastery, performance, and social goals.

Discussion

The present research study reached the findings that most of the students of secondary school level preferred visual and auditory learning styles. Keeping in view the students of secondary school level, the research study decided that learners must know their preferred learning styles. If students are familiar with their preferred learning styles, this will prove an aid for a successful teaching and learning procedure. This familiarity of the learning style of students at the secondary school level will be influential to learn effectively.

One of the studies was carried out by Drysdale et al. (2001). The major focus of this research study was to bring out the answer to the question that has the familiarity of learning styles has an effect on the students' achievement motivation. The study result of learning styles showed a significantly positive effect on the learning styles of students at the secondary school level.

Dawood Al Hamdani(2014) established a research study. The purpose of the study was to determine the learning style of Gulf University students. A sample of 267 SU students was taken. Seventy-five percent of females and twenty-five percent males were selected. He distinguished the types of learners there. Whether there was a visual learner, auditory learner, or kinesthetic type of learner. The major findings of this research study were that there among all of these learning styles, no learning style is dominant.

A major finding of the presently conducted research study is that students mostly showed a high level of accomplishment motivation at the secondary school level. This is concluded from the numerical data interpretation of this research. Students in this research exhibited that they are helpful to others. They are confident in doing their school work. They have to wish to perform better than others. They want to be a group leader. In this way, they opt to achieve a high degree of achievement motivation. All of these results are also strengthened by the findings of Dowson &McInerney(2001) and Pintrich (2000). They also found that achievement motivation is a force that helps students to excel in their learning. The pursuit leaning toward objective deportment in the formulation of the combined interface, competence regarding content, and presenting tremendous work that is handing over to them. These goals are very friendly in developing learning achievement behavior. These goals are enhanced by causing the source of happiness for others. It creates concepts in learners. When people admire, assign, and keep other people happy, it will help in enhancing objective learning behavior at school grades. These results are aligned with the finding of Dowson & McInerney's (2003) line of investigation.

Mastery goals are related to expertise and an increase of information and comprehension by putting efforts into learning (Murphy & Alexander, 2000). Performance goals are aiming at the success of learners. In learning, this is the notion to achieve something in life. This is referred to as a wish to obtain positive judgments and leave unfavorable judgments of an individual's expertise and worries (Murphy & Alexander, 2000). The major role of performance goals is to take success as a performance regarding others. A major symbol in learning is to gain knowledge to get accomplishment in life. This is the primary obligation of the teaching and learning process to empower the learner to be a success in their learning with the help of anyone(Kazu, 2009). If the teacher knows their learning styles, it will be beneficial for learner's achievement(Peacock, 2002).

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A study was conducted by Simelane and Mji (2014). The study aimed at developing and integrating a technology-engagement teaching strategy (TETS). This study helped by clickers in classifying the learning styles of students in Mathematics. For ongoing assessment of clickers was established. The findings and conclusion of the research study depicted that if technology-engagement teaching strategy (TETS) influent carefully with the aid of clickers, it will be beneficial for the student's academic performance. İlçin, Tomruk and Yeşilyaprak (2018) conducted a line of investigation. This line of investigation was aiming at identifying the way apprentices' erudition belongs to Turkish physiotherapy apprentices. Furthermore, this line of investigation was aiming at establishing interconnectedness of academic performance and numerical values of subscales of apprentices' ways of erudition. The purpose was to bring out that is there are influences of ways of apprentices' erudition on academic performance. To determine the way of erudition of 184 physiotherapy apprentices, Grasha-Riechmann Student Learning Style Scales were applied. For the standard academic performance cumulative grade point average was set. Learning styles move along six quanta. These are independent and dependent. Then there is a competitive and collaborative group of learning styles. Lastly, there is a learner with characteristics of avoidant and participant. To compare apprentices' academic output, The Kruskal-Wallis test was established. The result of this line of invite resulting depicted a collaborating way of apprentices' erudition. But this fact was also drawn from this line of investigation that the participant way of apprentices' erudition has also an association with significant-high academic performance. To make the academic To of Turkish physiotherapy apprentices outstanding, it is imperative that instructional technology may strengthen participation style erudition. There found a significantly positive correlation between academic performance and participant learning style.

Conclusions

Keeping in view the objectives of the presently conducted line of study, the following conclusion was drawn;

- 1. Secondary school level students give preferences to the visual and auditory learning style
- 2. To achieve high degree goals like mastery, performance, and social goals, learners at the secondary school level are not so much motivated.
- 3. There is interconnectedness in learning styles and students' achievement motivation of secondary level school students. There was found interconnectedness in visual learning style and that of mastery, performance, and social goal of students' achievement motivation. Moreover, the auditory learning style is interconnected with three achievement motivation goals as mastery, performance, and social. Whereas, kinesthetic learning style was insignificantly correlated with mastery, performance, and social goals of achievement motivation.

Recommendations

- 1. Auditory and visual learners learn best through audio and videos program. Display of charts, pictures, maps, graphs, etc helps auditory learners aids in classroom teaching. This may improve in a better way students' performance. Moreover, it is a fact that teachers with insufficient knowledge about learning styles to be identified higher authorities of school and through in-service teachers training; teachers should be exposed to the theoretical aspects of learning styles. The training can be expanded to all levels of educators and include the preservice instruction at educators' coaching institutes.
- 2. The normal psychometric processes such as social attractiveness, reasoning, meta-cognition, and self-awareness may be used by the teachers to initiate responsibility and rationality in the procedures and goal achievements of their students.
- 3. Higher authorities of both public and private sector schools may afford training for their teaching staff about the teaching and learning styles. Through developing aptitude friendly environment in both public and private educational institutes by academic and administrative authorities may enhance students' learning behaviors.

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