Research paper

A Study of Iranian Technical Students' Motivational Strategies across Their Learning Styles

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Citation

Rezaeifard, Z.,Mansouri, Z.,& Aghashiri, S. (2022).A study of Iranian technical students' motivational strategies across their learning styles. *Journal of new advances in English Language Teaching and Applied Linguistics*, *4*(2), 991-1002.

10.22034/jeltal.2022.4.2.8

Received
2022-07-04

Revised
2022-10-10

Accepted
2022-10-16

Keywords:
motivation; learning styles; visual; auditory; kinesthetic

The more teachers are aware of the learning pattern of their students, the more successful ways they can use their teaching methodology to encourage them to feel more inspired and appreciate the classroom environment. Some students may enjoy listening guidance, whereas others may feel better about tactile or kinesthetic training. The lack of knowledge on these issues can create problems in teaching-learning strategy. The purpose of this research was to have a precise look on the relationship between teaching through learning styles and motivation of Iranian technical students. In so doing, 120 technical university students were asked to participate in this study. Two questionnaires of learning styles and motivation were used to collect data. The results of statistical analysis of learning styles and motivational strategies questionnaire showed that there is a significant relationship between the technical students' learning styles and their motivation. It was also found that kinesthetic learning style is a significant predictor of their motivation. The participants of the present study were aware of different learning styles in their process of learning and put much more emphasis on their shoulders indicating that teacher should raise their motivation and try their best to fulfill their educational requirements. Results can provide means for the use of these techniques in the instructional environment.

Introduction

An individual's motivation level is anticipated to be strong in order for him or her to accomplish in a task and feel joyful. In general, a person with strong levels of motivation is enthusiastic and driven to achieve in everything, works hard to succeed, has high levels of performance, manages time effectively, develops himself / herself, and has great self-confidence. A student with strong motivation in the learning process, on the other hand, is engaged in the lesson, prepares for class, asks questions, participates in discussions, concentrates on the subjects he or she needs to learn, never gives up in difficult times, and is tenacious and determined to learn (Zambas, 2019).

Motivation is described as a need or want that causes an individual to take action (Merriam-Webster, 1997); effort taken to achieve a result (Williams & Williams, 2011). Motivation is

composed of three major components: beginning human behavior, guiding this behavior, and maintaining it. Motivation is divided into two categories: intrinsic and extrinsic.

Intrinsic motivation is described as an individual doing something about which he or she is intrigued, which interests him or her, and which he or she desires; individuals with high levels of intrinsic motivation exert required effort with their free choice to achieve their goals (Lei, 2010). Extrinsic motivation, on the other hand, is characterized as the drive to learn in response to external influences. Extrinsic motivation is demonstrated by an individual's attempt to achieve his or her goals in exchange for tangible advantages (getting great grades, being commended for learning, receiving pocket money, gaining prestige) or refraining from different punishments or constraints (Ryan & Deci, 2000).

Although motivation is vital in the learning process, it is not sufficient for an individual to achieve his or her objectives. Educational experts (Sengül, 2017; Young & Vrongistinos, 2002; Eryaman, 2007) emphasize the importance of individuals being conscious of their learning and using various learning styles to enhance learning. According to relevant research, when individuals do not apply effective, appropriate learning techniques during the learning process, they fail, lose trust and motivation, and become uninterested or indifferent to learning (Ciftçi, 1998; Jimenez, et al., 1996).

The concept ‘learning styles’ refers to the fact that each learner learns in a unique way. They interpret the information and process it accordingly. It may be divided into three types: visual learners who rely on the image being provided, auditory learners who rely on listening abilities and verbal components, and kinesthetic learners who include tactile learners. Self-motivation, on the other hand, has a significant impact on the learning environment of pupils. It is the capacity to do what has to be done without being influenced by other people or circumstances (Business Dictionary, 2019).

Students that have two or more learning styles may do better in school. John, et al., (2016) have advanced techniques for issue resolution on their own. It is important for instructors to understand their students' preferred learning techniques because teachers may improve learning by adopting appropriate teaching approaches. They will develop effective learning tactics to help students improve their learning abilities. As a result, the study's goal is to better understand the link between students' learning styles and their self-motivation to engage in learning transfer as a better training assessment in satisfaction with their learning activities.

One answer is to pay attention to one's own preferred learning style when determining how to learn. While there is obviously some truth to the statement that different people may have different learning styles, and it is important to know what the right way to study or instruct is. When it comes to teaching and taking an eagle's eye, we find that most teachers ignore such a multitude of considerations as personality variations between students and diverse learning methods and types, because students are handled the same. Reiff (1992) notes that all students have individual characteristics relevant to their learning processes. Sitt-Gohdes (2001) also insists that most teachers teach the way they have already learned. They may have created dissatisfaction on the part of a good number of students when they witness that many teachers do not account for their learning interests.

This study sought to find out the relationship between teaching through visual, auditory and kinesthetic (VAK) learning styles and motivation of Iranian technical students. In addition, it

investigated the most significant predictor of technical students' motivation among their learning styles.

Review of Literature

Learning styles are studied for many years and there are several models that are proposed by various researchers. While the finer distinctions are still debated, most authorities within the field generally agree upon four basic learning styles: auditory students, visual students, kinesthetic students, and tactile students. There is an excellent deal of overlap between the kinesthetic and tactile learning styles, and that they are going to be treated together here.

Dunn (1984) reported that the majority students identified their learning strengths correctly and Dunn and Dunn (1979) found that 30% of faculty age children were auditory students and 40% were visual and 30% were kinesthetic. Auditory mode is a technique in which students are exposed to the recorded pronunciation of the word during teaching. Since auditory input makes the phonological dimension of word accessible, the pronunciation of the vocabulary is acquired better and easier than any other processes (Burki, 2010).

In a research carried out by Burki (2010), the impacts of auditory and non-auditory modes on Korean students' mastery of target words were examined. The results showed that the words presented through the auditory mode were learned and retained much better. Regarding the pronunciation aspect, the students obtained a better knowledge of it for the words taught through the auditory mode. However, there was not a significant difference between the spelling knowledge of the words presented through the auditory mode and those learned through the non-auditory one. Consequently, adding the auditory approach to teaching new words makes students have a better knowledge of lexical items. In addition, the retention of them over time will be much easier.

Mayer (1994) found that when students tenaciously pick data from introduced improvements, organize data into sound portrayals, and afterward put forth attempts to absorb new data with other data, a significant cycle will happen. This examination accepted that when students can pick data both verbally and outwardly than when they approach just to one method of data, learning happens all the more viably. This examination likewise assumed that contrasted with verbal students who advantage more from verbal materials, visual students generally benefit from visual materials. Nonetheless, a decent visual-verbal learning style will be of extraordinary advantage to our results. That is, students with a fair visual-verbal learning style obtain language all the more viably and effectively. Students' presentation on perusing test was best when they use both verbal and visual data (e.g., adjusted visual-verbal learning style). All in all, students perform respectably on perusing cognizance test when they select just a single method of data.

Soylu and Akkoyunlu (2009) carried out a study to investigate the effect of learning styles on students' achievement in different learning environments. They selected 39 participants from the department of computer education and instructional technology at Hacettepe University. Utilizing Kolb's Learning Style Inventory, the authors attempted to categorize individuals on the basis of their self-reported preferred learning style. Three different learning environments which were designed within the scope of their study were: Text-based learning environment, narration-based learning environment, and computer-mediated (narration +

music + text + static picture) learning environment. They reported that learning styles did not have effects on the achievement of students in different learning environments.

Ghaedi and Jam (2014) investigated the relationship between EFL students' learning styles and motivation for higher education. To that goal, 90 EFL students from Shahrekord University were chosen. Two surveys were completed by the students. One of the questionnaires indicated students' learning styles, and the second questionnaire determined students' motivation for further study. The initial questionnaire's data analysis suggested that visual learning styles were the most preferred learning styles. According to the second questionnaire, the majority of students are very motivated to pursue higher education. The study of the association between learning styles and motivation for higher education discovered a substantial relationship.

Olivos et al. (2016) investigated the link with motivations to transfer, a term used to analyze whether professional training information and competences are transferred to the working setting. They filled out a self-administered questionnaire that contained the Kolb's Learning Styles Inventory, two scores developed to gauge student desire to transfer their learning from training experiences, and a satisfaction scale with the activities. A correlation study revealed that there were positive and fairly high relationships between transfer motivations and "the relevance of the activities to academic success." A discriminant analysis of transfer and learning styles indicated that the "Student training motivation" component distinguished assimilators from convergers.

Cheung (2018), in a subjective report, examined the impact of teachers' utilization of motivational techniques on students' motivation. Information were gathered from 344 first-year university students through homeroom perception and overviews. The outcomes uncovered that the composing educators' utilization of systems in creating students' underlying motivation in the study hall drastically improved students' uplifting demeanor fearlessness in the composing course.

Using the VARK learning style paradigm, Halif, et al., (2020) investigated the relationship and consequences of learning styles and student engagement. The impacts of students' learning styles on classroom participation were investigated. To determine the moderating effects of student motivation on the link between learning styles and student engagement, three types of students' majors were separated. According to the findings, only visual learning styles influenced all three variables (behavioral, cognitive, and emotional) of student involvement. These findings also revealed that visual learners were more engaged in the classroom than auditory and kinesthetic learners.

Basir and Kolahi (2021) investigated the relationship between EFL learners' L2 motivational self-system (L2MSS) and its components, which included the ideal L2 self, the ought to L2 self, L2 learning experience, and academic resilience. The study included 123 Iranian EFL learners, both male and female. Two questionnaires were used to assess L2MSS and its components, as well as academic resilience. The statistical analysis revealed a significant and positive relationship between EFL learners' L2MSS and academic resilience. It also demonstrated that the L2MSS of EFL learners could be a significant predictor of their academic resilience. However, no significant relationship was found between EFL learners' ideal L2 self, ought to L2 self, L2 learning Experience, and academic resilience.

Brophy (2008) found that the meaningfulness of curricula is related to structured content around big ideas and a genuine application of contents to life outside of school. When material is relevant to students' real-life situations and interests, they find a rational reason to engage in activity autonomously. Learning content without learning when, where, or why it might be useful is less constructive. Problems of teaching and learning to the technical university students are widely recognized and commonly shared by educators and researchers. Learning is a demanding task and needs time and energy. Students who dedicate themselves to learn, encounter different sorts of problems in grasping the educational contents. Students do not try to discover their learning styles and use strategies compatible with their styles of learning. In this way, they are not able to learn more easily and more efficiently.

Compared to the comprehensive work undertaken on approaches and educational activities, the analysis of learning types in the classroom is often neglected as a critical field. It matters because the interaction is evaluated by motivational learning strategies. This research focuses on the realm of learning styles as part of teaching and using different techniques of teaching according to VAK students' learning styles as some suggested solution for achievement in learning. By conducting this study, the researcher tried to explore the relationship between teaching through VAK learning styles and motivation of Iranian technical students. Therefore, the following research questions are posed to address the objectives of the study:

1. Is there any significant relationship between teaching through VAK learning styles and motivation of Iranian technical students?
2. Which learning style is a significant predictor of Iranian technical students' motivation?

Methods

To answer the research questions of the study, a descriptive design was adopted to collect data. In this survey, the researcher used a questionnaire to collect information from the respondents.

Population and Sampling

The participants of this study were 120 Iranian technical university students. They were chosen based on convenience sampling. This sampling is a very convenient way of collecting information from a large number of people within a period of time. The members of the investigation are studying in different fields at technical university of Eqlid, Fars province. The members incorporate both male and female students whose age goes from 16 to 26, with Persian as their native language.

Instrumentations

To achieve the purpose of the study, the researcher utilizes certain instruments to measure the participant's learning styles and motivation. They are described as follow:

Learning Style Modality Questionnaire

In this study, the participants' learning styles will be measured by the modality (learning channel preference) questionnaire designed by O'Brien (1989). It consists of three sections each of which contains 10 items. Section 1 consists of visual learning style features. Section 2 contains auditory style and section 3 refers to kinesthetic style. The participants should indicate how often the sentence applies to them, according to 3-point Likert scale responses. They are

as follow: 1: never applies to me, 2: Sometimes applies to me, 3: often applies to me. The reliability reported by Rajapakshe (2018) for the three main areas respectively 0.83, 0.80, and 0.77.

Motivated Strategies for Learning Questionnaire (MSLQ)

MSLQ is developed by Pintrich and DeGroot (1990) and contains 47 items on a Likert scale aiming at uncovering students' use of motivational strategies in learning. In fact, the survey investigated to what extent students are motivated enough to learn English. The participants were given the survey to show their motivation by rating their answers on a Likert scale from *1 = not at all true of me* to *7 = very true of me.* The reliability of MSLQ as reported by Duncan and Mckeachie (2005) was .78. To desirably collect the data, students were given the Persian survey of motivation to be compatible with their native language.

Data Collection and Procedure

All procedures of the data collection were conducted during the class time inside the classroom. In order to explore the differences among auditory, visual and kinesthetic students in terms of their motivational strategies, the following steps were taken: The researcher personally reached out to the participants, and personally observed the whole data collection process. Initially, the researcher briefed the students on the objectives of each questionnaire, and provided them with some general background; then, the researcher distributed the questionnaires, and made sure that all the participants would clearly and completely comprehend all the items. The researcher patiently and elaborately responded to any questions the participants asked and provided explanation whenever it was needed. Finally, the data were imported to SPSS software, and the statistical analyses began.

Data Analysis

The data were collected and submitted to SPSS software version 26.0 to perform statistical analyses. The reliability of the questionnaires were measured through Cronbach's Alpha formula. To address the first research question, Pearson correlation was performed. Multiple regression was used to answer the second research question of the study.

Results

The descriptive statistics of male and female participants on learning style questionnaire are shown in Table 1.

Table 1

Descriptive statistics of the participants on learning style questionnaire

Learning Styles	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Visual	60	10.00	30.00	420.00	17.95	5.19
Auditory	60	10.00	30.00	665.00	21.65	5.23
Kinesthetic	60	10.00	30.00	640.00	20.35	5.26

The results of descriptive statistics showed that the most preferred learning style among the participants of this study was kinesthetic. The descriptive statistics of the participants' performance on motivated strategies for learning questionnaire is shown in Table 2.

Table 2

Descriptive statistics of the participants' performance on MSLQ

	N	Minimum	Maximum	Mean	Std. Deviation

MSLQ	60	44.00	238.00	87.34	5.19

The higher rate of obtained scores shows that the participants tend to "very true of me" option in questionnaire. Finally, the reliability of the questionnaires was estimated through Cronbach alpha formula. The results are illustrated in Table 3.

Table 3

Reliability statistics of the learning style and MLSQ questionnaires

	Cronbach's Alpha	N of Items
Learning style	.784	30
MLSQ	.743	44

The results showed that both learning style and MLSQ questionnaires had a satisfactory level of reliability. In order to answer the first research question in finding whether the significant relationship between the students' learning styles and their motivation, a Pearson correlation was performed MLSQ and learning style. The results are presented in Table 4.

Table 4

Pearson correlation between students' learning styles and their motivation

		Learning style	MSLQ
Learning style	Pearson Correlation	1	.536**
	Sig. (2tailed)		.000
MSLQ	Pearson Correlation	.536**	1
	Sig. (2tailed)	.000	
	N	120	120

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

As shown in Table 4, the Pearson correlation between students' learning styles and their motivation was .53, and the p-valuewas.00 (significant at the 0.01 level); hence the Pearson analysis reported a positive significant relationship between the two variables. Therefore, the first research question is verified, and it was demonstrated there is a statistically significant relationship between technical students' learning styles and their motivation.

In order to answer the second research question of the study in finding which learning style is a significant predictor of Iranian technical students' motivation, a multiple regression analysis was performed. Table 5 provides the extent to which variability in the dependent variable (students' motivation) is accounted for the independent variable (learning styles) together.

Table 5

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.574[a]	.329	.312	12.507

a. Predictors: (Constant), learning style

b. Dependent Variable: motivation

With regard to Table 5, R is the measure of the prediction of the dependent variable; in this case, motivation. A value of 0.57 indicates a good level of prediction. The "R Square" or R^2 value is the proportion of variance in the students' motivation that can be explained by the

independent variables (i.e., learning styles). It indicates that learning styles explain 57% of the variability of their motivation. In order to determine whether the provided model is a good fit for the data, a one-way ANOVA was performed. The results are shown in Table 6.

Table 6

ANOVA of regression model

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5.078	2	2.539	47.56	.000[a]
	Residual	144.289	117	5.344		
	Total	149.367	119			
a. Predictors: (Constant), learning style						
b. Dependent Variable: a. motivation						

The *F* value in Table 6 verifies the fitness of overall regression model for the data. The result shows that ($F_{2, 117}$ = 47.56, p = 0) p-value is lower than assumed level of significance (i.e., 0.05); therefore, students' learning styles can significantly predict their motivation (i.e., the regression model is a suitable method for analyzing the data).

Table 7

Coefficients of regression model

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-12.825	5.308		-2.416	.023
	visual	-.061	.493	-.055	-.124	.903
	auditory	.132	.034	.802	4.394	.116
	kinesthetic	.282	.062	.925	4.539	.000
a. Dependent Variable: motivation						

Regarding this table, kinesthetic learning style (b =.925, p < .05) is a significant predictor of the students' motivation which would indicate that larger kinesthetic learning style is related to higher the students' motivation. Therefore, the second research question of the study is verified.

Discussion

The results indicated that there was a strong relationship between the students' learning styles and their motivation which clearly shows that the participants of the current study seemed to be aware of the role of their motivation and their preferred learning style and its influence in the classroom. It can be a helpful factor for teachers to easily perform their methodology in the classroom and manage its use depending on the students' learning styles.

With regard to the first research question of the study, this finding is able to support those of Cheung (2018) who showed that motivation in the study hall drastically improved students' uplifting demeanor fearlessness in the composing course. In addition, in line with the results of this study, Ghaedi and Jam (2014) found a significant relationship between EFL students' learning styles and motivation for higher education. Concerning the second research, the result contrasts with those of Halif, et al., (2020) who showed that only visual learning styles influenced all three variables (behavioral, cognitive, and emotional) of student involvement.

Based on the concepts of motivation and learning styles, the current study's findings may be validated. In fact, the more an individual is motivated to complete a task, the more persistent the individual will be in achieving the intended objective. However, when it comes to the

components of learning styles, the study's findings suggest that the two components of learning styles cannot predict motivation in individuals separately. While assessing its three key components, the learning styles idea as a whole examines other underlying assumptions of motivation. Thus, the overall idea of learning styles demonstrates a substantial association with motivation, although its components provide disparate results. This shows that diversity in participant scores in each of these components is caused by learner differences. Each participant may have a distinct motivation for remaining motivated, and each reason may be classified into one of the aspects of learning styles.

Conclusion

Creating a student-centered environment in the classroom, along with explicit instruction on specific motivational strategies provide students with supports that will help them become proficient students. However, motivational-based instruction is a relatively new issue in both language learning and applied linguistics. The technical teacher provided the theoretical assumptions of language learning, the efficient activities, and methods required to include in instruction.

It can be concluded that students with a high degree of knowledge of students' learning style can help them understand the language and build a new and fun experience in contrast with teachers who do not.

This research has some educational consequences for all stakeholders, such as technical decision makers, material creators and technical students, who have a kind of open-minded outlook on developing ideal teaching. Preparing some TTC (Teacher Training Course) classes, and enriching all tutors, instructors and teachers on this issue can lead English language learners to be more enthusiastic about learning, and enjoy the environment of the classroom. Therefore, the more aware and qualified teachers are, and the better teaching materials and methods are, the more improvement students achieve.

This study is potentially a call for language instructors, educators and language teaching and learning experts to pay more attention to learning styles. The results may motivate teachers who still use the conventional verbal method of translation in their teaching to change their point of view in favor of a non-verbal method of teaching the language. The outcome can, in particular, be of great benefit to teachers in the technical sense who are typically presented with the student's request for information on appropriate language learning strategies.

The findings of the present study can be beneficial for language teachers to eliminate or minimize the counterproductive effects of conventional techniques and strategies on technical learners' behavior as well as their learning. Utilizing motivational strategies, teachers can train more cooperative learners who can be more efficient and successful social members.

In order to build a sense of inspiration for learning English, teachers should take part in their classroom dialogue while teaching and strive to make the most of all the opportunities available to accomplish that goal. It would be safer for our teachers to be conscious of students' attitudes towards their teachers and, to the degree, they stress their learning styles in the classroom. This awareness may give teachers a clue to better teaching and fulfilling students' learning needs.

As a final comment, it can be seen that given different learning patterns, it has been shown to be successful in studying the language. While all generalizations based on the findings should be drawn with care and prior to the analysis, the constraints placed on the research must be taken into consideration. Putting the learning styles into practice, this study suggests integrating motivational-based strategies and learning styles as useful methods to mediate language learners when they are trying to do some language tasks. The results of the study were more or less skewed toward the positive impacts of different learning styles in language classes. Besides, the friendly and active atmosphere in the motivational-based classes and their collaboration encourage them to participate more voluntarily in class discussions.

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