

Effect of Online Learning on ESL Learning Styles and Learning Outcomes in Context of Pakistan

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Abstract

The situation of COVID-19 has bred major conversion in education system compelling teachers and students to adapt to online learning. This study aims to investigate effect of online learning on learning styles and learning outcomes for ESL in context of Pakistan. Quantitative methodology was used and the participants were selected through random sampling. The data was collected by using an online Likert scale questionnaire. Statistical analysis of collected data reported that auditory learning style was most preferred by the students followed by the tactile, visual and kinesthetic respectively. The findings revealed that students were more inclined to learn better in physical classroom as compared to online classroom in their opinion. The findings reported that online learning neither completely failed nor completely succeeded to facilitate students because ½ % of the participants asserted that the online environment matched their learning styles and, similarly, ½ /half of the participants disagreed. The students were able to tailor their learning styles according to contextual demands but it decreased their language learning outcomes. It is interpreted from the results that online learning in context of Pakistan needs to improve and the teachers and course designers should consider individual preferences to enhance online learning of English.

Keywords: online learning, learning styles, learning outcomes, ESL

Introduction

Educational researchers were always enthusiastic to know why people differed in their ways of learning or processing new information. After extensive studies, they reported several factors contributing to the reason of difference and learning style was stated as one of those significant factors. Learning styles are cognitive,

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psychological and affective traits (Keefe, 1979) which direct a learner's approach to learning experience (Campbell et al, 1996). They are likeable ways of learning which differ from person to person. Learning styles are preferred ways to learn but the wide research reported that they can be changed, tailored or modified according to academic environment or contextual demands (Davidman, 1981; Schmeck, 1981; Reid, 1987). Learning outcomes are affected by learning styles because if the learning environment complements the learning style of individuals, their academic performance is better (Domino, 1979; Kang, 1999; Babadogan, 2000). Similarly, learning styles act as a significant variable influencing ESL students' language learning performance. It is emphasized that teachers and course designers should consider and identify the individuals' learning style for providing effective second language learning environments. Online learning is an approach to acquire and use knowledge by a collaboration of internet and communication technologies. Online learning has become new normal due to COVID-19 pandemic. People from all over the world have shifted to online learning to control the spread of corona virus. The researchers are curious to investigate whether the online learning is facilitating the students to learn maximum, thus, it is important to report if the online learning environment complements learning styles of students or not because traditional methods used in physical classroom might not be appropriate to use in online teaching.

To date, research has been conducted to investigate about individual learning style preference and to analyze its relationship to language learning outcomes for native and non-native English students. The researchers have studied learning styles both in traditional or physical classroom and in online classroom. There are researches which conducted a comparative study to observe the academic performance of two sections enrolled in same course, one in online setting and the other in traditional setting (Neuhauser, 2002; Shachar & Neumann, 2003). However, the relationship between environment, perceptual learning styles and language learning outcomes has not been examined for ESL students who attended same course in physical classroom and online classroom. On March 16, the Ministry of Federal Education in Pakistan announced the suspension of on campus classes to combat the spread of COVID-19 and the students had to shift to online learning. This study investigates the effect of online learning on perceptual learning styles and language learning outcomes of ESL students in Pakistan who switched from physical learning to online learning. This study uses 'Dunn and Dunn Learning Style Theory' (1975) as theoretical framework. According to this theory, the learning experience is

influenced by five elements; environmental, emotional, sociological, physical and psychological. Environmental factors include light, sound, temperature and design and physical element includes perceptual learning styles i.e. auditory, visual, kinesthetic and tactile (Cassidy, 2010). Auditory learners learn best by using their sense of hearing through sounds or music. Visual learners use their sense of sight and learn best by use of pictures, images or visuals. Kinesthetic learners learn by being physically involved and by experiencing what they learn. Tactile learners learn by experiments and its 'hand-on' learning. This study examines role of environment and perceptual learning styles in learning experience. This theoretical framework is applicable because the design of environment has changed from physical to online. The researchers are enthusiastic to investigate how this change in environmental design has affected perceptual learning styles and learning experience (language learning outcomes). Therefore, online learning environment is independent variable, learning styles and language-learning outcomes are dependent variables in this study. This study aims to investigate the preferred perceptual learning styles of ESL students for online learning and their attitude or opinion about it. Moreover, the significant objective is to report whether the students had to tailor their preferred learning styles in response to online learning, because studies reported that learners of second language could modify their preferred learning styles to those that were proven successful to enhance learning outcomes (Davidman, 1981; Schmeck, 1981; Reid, 1987), or the online environment matched their learning style. Lastly, it aims to analyze effect of online learning on language learning outcomes because studies had reported that when learning environments complemented students' learning styles; they scored better than those students who learnt through instructions contradicting their learning styles (Domino, 1979; Kang, 1999; Babadogan, 2000). This paper describes effect of online learning, during COVID-19 in context of Pakistan, on learning styles and language learning outcomes of ESL students.

Review of the Literature

❖ Learning Styles

It has always been a concern of educational researchers to study various factors that contribute to the learners' differences in how they learn. Learning styles, one of those significant factors, was defined by Keefe (1979a, p. 4) as 'cognitive, affective, and psychological traits that are relatively stable indicators of how learners perceive, interact with, and respond to the learning environments' (cited in Reid, 1987).

Learning styles were defined by Stewart and Felicetti (1992) as those learning conditions which are preferred and likeable by a student to learn (as cited in Ghaedi & Jam, 2014). Learning styles were defined as those methods used by the learners to produce new concepts, principles and rules that act as a guide for them in new learning environments (Kolb, 1984). Learning style was defined as learner's particular behavior that directs his approach to learning experience (Campbell et al, 1996). Dunn (1991) described learning style as the way, which differs from one person to another, adopted by a learner to understand and preserve new information (cited in Goodson, 1993, pg. 21). Learning styles were classified as visual, auditory, kinesthetic, group and solitary learning styles (Moenikia & Babelan, 2010).

❖ Language Learning Styles

Concrete, analytical, communicative, and authority-oriented were four major language-learning styles identified by Willing (1994). Ehrman and Oxford (1995) highlighted the importance of learning styles, with respect to language learning, by directing second language teachers and course designers to consider and identify the individuals' learning styles for providing effective second language learning environments. Learning style was found by Oxford (1989) as a significant variable which influence second language learner's performance in a learning environment (cited in Song Oh, 2011). The study conducted by Reid (1987) stated that the students learning English as a second language preferred different learning styles that were influenced by their language background. Wang (1992) conducted a study on 490 undergraduate English students and found that the individuals' difference in English language learning was significantly due to difference in their learning styles. The research conducted by Nunan (1991) found that those students who were well-aware of their learning styles were more effective language learners than those who were not aware of their learning styles (cited in Wong & Nunan, 2011).

❖ Effects of Learning Styles on Learning Outcomes

Meisuri, Ren, Adisaputera, Siregar, and Sanjaya (2021) conducted a research to report the impact of learning styles on English language acquisition. The tertiary students were selected as participants and were asked to answer a questionnaire based on VARK modal. The answers given by the participants were analyzed in relation to their scores in course. The results reported that the students who preferred reading and writing learning style scored much better than those students who preferred other learning styles. Therefore, it was concluded that the learning styles substantially influence English language acquisition. Babadogan (2000) stated

that if the learning styles of learners were identified and learning environments were designed according to them, it fostered the academic achievement (as cited in Dag & Gecer, 2009). Learning outcomes were impacted greatly by the learning styles; the learning outcomes could be accelerated by helping the learners to identify their strengths and weaknesses (Li & Qin, 2006). It was found by Esfahani (1989) that if the students were provided learning environments which match their natural and preferred ways of learning (learning styles); they learnt more enthusiastically and easily (as cited in Goodson, 1993). Dunn (1988) also found in her research that if the learning instructions and environment were designed keeping the learners' preferred learning styles into consideration, the learners pulled off higher scores in tests. Another research showed that students who were taught in the learning environments that complemented their learning styles scored better than those students who learnt through instructions contradicting their learning styles (Domino, 1979). Lindsay (1999) found that the learners were more satisfied and their academic achievement increased if the teaching style and learning style were in coherence (as cited in Moenikia & Babelan, 2010). Brown (1994) stated that if the teaching approach matched the learners' learning styles, they could learn more effectively, satisfactorily and their academic performance as well as motivation would increase (as cited in Kang, 1999).

❖ **Change or Modification in Learning Styles**

Contemporary research has established that learning styles are reasonably strong behaviors rather than inflexible biological traits, and thus they can be changed (Davidman, 1981). Schmeck (1981) stated that the learners can tailor their ways of learning according to the demand of context and instruction as learning styles are influenced by the context and the nature of task; Tarone (1979) examined that if a learner has to respond to a different context, style shifting can occur in response (as cited in Reid, 1987). Cohen (1984) found that the learners of second language can modify their preferred learning styles to those that are proven successful to enhance learning outcomes. Reid (1987) found in his study that 'modifications and extensions of ESL student learning styles might occur with changes in academic environment and experience'.

❖ **Online Learning**

Moenikia and Babelan (2010) defined online learning as an approach to learn by the collaborative use of technology and communication. Zapalska and Brozik (2006) defined online education as an educational opportunity where students can learn

without being physically present in the same location as instructor. Zapalska and Brozik (2006) also concluded in their study that if the manner of providing instruction and learning styles are in harmony, the academic achievement in online education could increase significantly. Moore and Kearsley (1996) defined online learning as 'planned learning' in which the learners and the instructor are in different places and, hence, demands particular methods of 'course design, different techniques of instruction by technology, as well as managerial and organizational arrangements' (cited in Vorobel & Kim, 2012). Karim and Mahboob (2020) conducted a study to find the degree of satisfaction of undergraduate students of Prince Sattam bin Abdulaziz University at Al Kharj about online learning during COVID-19 pandemic. They also aimed to report either the students preferred face-to-face learning or online learning. It was reported that the significant proportion of population were in favor of online learning. In the students' opinion, online learning was more convenient; the students felt more confident and believed that the online learning can replace face-to-face learning. However, 23% students reported to have internet issues. The researchers emphasized in view of their analysis that the curriculum designers should offer keen attention to the preferences of the students while designing curriculum or syllabus for effective learning. Shachar and Neumann (2003) stated in the results of their study that the students learning through online education outperformed the students of traditional classroom when their academic performance was compared. Neuhauser (2002) conducted a comparative study to observe the academic performance of two sections enrolled in same course, one in online setting and the other in traditional setting. The results reported no significant difference in achievement of test scores; in fact, it was observed that students of online education scored slightly higher and no significant difference in learning styles was also reported. Alfiras, Bojiah and Yassin (2020) designed a study to describe the changing methods of Gulf University in teaching and learning during COVID19 and how teachers and students managed to achieve their teaching and learning goals. It was reported that the teachers and students found online classes very effective to teach and learn highly theoretical courses and semi-theoretical courses. However, courses related to the study of human behavior and mathematics were taught less effectively through online mode of teaching as compared to face-to-face teaching and learning. It was reported that the participants asserted that online learning and teaching can certainly be welcomed and strengthened in such pandemic situations, but when it comes to developing students' social skills, teachers are reluctant.

Methodology

Quantitative Methodology was used. An online survey questionnaire (Google Form) was conducted which consisted of three parts in total. The part I consisted of organized sets of five statements on each of the four learning styles (visual, auditory, kinesthetic, and tactile) to be studied. The part II was a self-reporting questionnaire through which the participants declared their preferred learning style by self-scoring method and the part III consisted of closed –ended questions asking about participants’ attitude towards online learning, changes in learning styles and effect on learning outcomes. All questions were designed to be answered on Likert scale. The subjects for this study were ESL students who shifted from physical learning to online learning due to COVID-19. Random sampling method was used in selection of participants. Quantitative Analysis Method was used to calculate the results, from all three parts, that were presented in the form of table and graphs in the paper.

Results

❖ Preferred Learning Styles

The findings of the study, presented in figure 1, revealed that the preference of 43.3 percent ESL students was auditory learning style. It was found that tactile learners were 30% and 20% students preferred visual learning style. The results showed that the participants were least oriented towards kinesthetic learning style and only 6.70% students preferred it. Therefore, it was concluded from the results that the students were significantly auditory learners as compared to tactile and visual learners and least were kinesthetic learners.

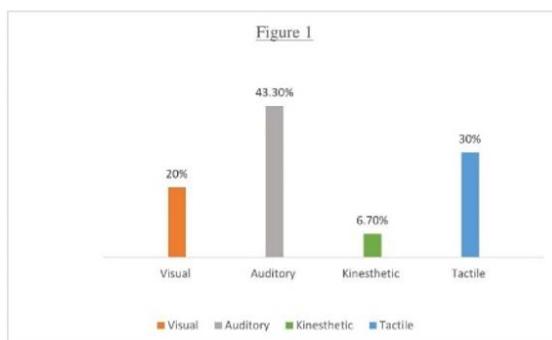


Figure 1: Preferred Learning Styles

❖ Attitude of ESL Students Towards Online Learning

The students were asked to answer three statements, on Likert scale. They were designed to find their attitude that how they felt about online classes in comparison to physical classes. The results, presented in figure 2, led to conclude that 13.3 percent students strongly agreed that they could learn as effectively during e-learning as in traditional or physical classroom while 30 percent agreed, 46.7 percent disagreed and 10 percent strongly disagreed. When the participants were asked if they could learn better in physical classroom, the findings described a great positive response because 43.3 percent participants strongly agreed, 40 percent agreed and negative response was lesser because 13.3 percent students disagreed and only 3.3 percent of total participants strongly disagreed. This revealed that the students were more inclined or comfortable to get educated in physical classroom as compared to online classroom.

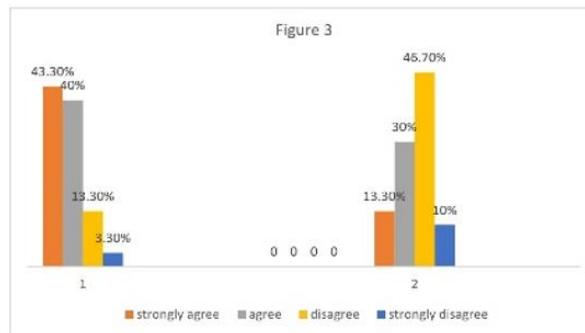


Figure 2: Attitude of ESL Students Towards Online Learning

Data Labels

1. I can learn as effectively in online class as in physical class.
2. I can learn better in physical class.

❖ Change in Learning Styles due to Online Learning

After the students were made well aware about their preferred learning styles, it was asked whether online environment was in coherence with their preferred style of learning or they had to tailor their style to enhance learning experience. The results, presented in table 1, described that the percentage of students who strongly agreed and agreed was 3.3 and 46.7 respectively, and the percentage of those who disagreed and strongly disagreed was 43.3 and 6.7 respectively. The results reported that the students chose to agree or disagree but least of them strongly agreed or strongly

disagreed. Therefore, the findings led to conclusion that e- learning neither completely failed to facilitate students because ½ % of the participants strongly agreed and agreed that the online environment matched their learning styles and, similarly, ½ /half of the participants disagreed and strongly disagreed. The results of the next statement, asking students if they tailored their learning style to enhance learning, reported that the percentage of participants who disagreed is slightly more (50%) than those who agreed (46%). No participant strongly agreed to the statement but 3.3% strongly disagreed. Therefore, no significant but slight or minor difference of 3.3 percent was reported by the findings between shifting of style and no shifting of style on agree and disagree scale. Similarly, there was difference of 3.3 percent between participants who strongly agreed and disagreed. On a broader scale, it was concluded that those who had to tailor their style of learning were less with a difference of 6.6 percentage than those who did not tailor their preferred learning style.

Table 1: Effect of Online Learning on Learning Styles

Sr.#	Statement	Strongly agree %	Agree %	Disagree %	Strongly disagree %
1	The online environment matched my learning style.	3.3	46.7	43.3	6.7
2	I shifted from my preferred style to another to enhance learning.	0	46.7	50	3.3

❖ **Effect of Online Learning on Language Learning Outcomes**

The effect of online learning on language learning outcomes was investigated (results presented in figure 3). The percentage of participants who strongly agreed and agreed that their language learning outcomes decreased during e- learning was 16.7 and 40 respectively, and 33.3% students disagreed while 10% strongly disagreed. On a broader scale of positive response (strongly agree and agree) and negative response (disagree and strongly disagree), there was difference of 13.4 % i.e. 13.4% more participants gave positive response that their language outcomes decreased

than those who gave negative response to assert that learning outcomes did not decrease.

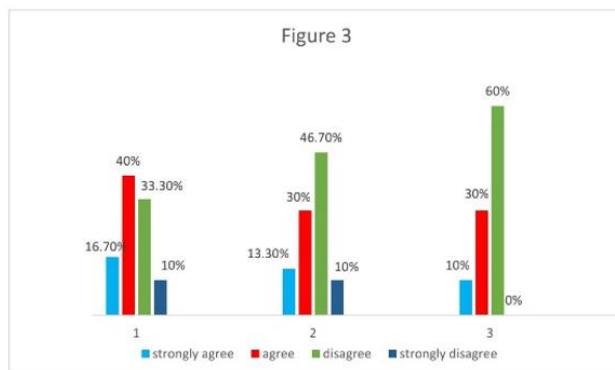


Figure 3: Effect of Online Learning on Language Learning Outcomes

Data Labels

1 → = language learning outcomes decreased during e learning.

2 = remained constant/ same in online class as in physical.

3 = increased during e learning.

Next, the respondents were if their language learning outcomes were same or constant. The findings reported that 13.3 % students strongly agreed, 30% agreed, 46.7% disagreed and 10% strongly disagreed. The respondents who disagreed and strongly disagreed were more with a difference of 13.4% than those who strongly agreed and agreed to assert that they could learn as effectively in online classes as physical classes. Lastly, it was asked if the language learning outcomes increased during e- learning to which the negative response was more because 60% of the respondents disagreed while 10% strongly agreed and 30% agreed. No participant strongly disagreed that language-learning outcomes increased during e- learning. Therefore, it was concluded that the negative response was more with 20 percentage than positive response with respect to increased learning outcomes. The findings of this part reported that the students gave more positive response to declare that language-learning outcomes decreased. Less positive response was given to assert that they were constant and least positive response to state that they increased.

Discussion and Conclusion

The results were similar to findings reported by Reid (1987). It was found by Reid (1987) that auditory learning style was majorly preferred by students of humanities. The subjects of current study were also students of humanities, department of English. The results of this study also reported that auditory learning style was chosen as preferred perceptual learning style by 43.3 % of ESL students. Tactile learning style was preferred style of 30% students. Visual learners were 20% and kinesthetic learners were least in number with a percentage of 6.70. It can be interpreted from the results that significant proportion of ESL students prefer to learn by discussions within online class by listening to lectures, by listening to audio books or aloud instructions. Tactile was at second number with respect to preference so it is interpreted that 30 percent of participants prefer to learn in online class by making projects or participating in hands- on activities. Visual learning style was marked at third with respect to preference and it is interpreted that 20 percent of the participants learn best through visuals, graphs, images and charts. Kinesthetic learners were least in percentage so it is interpreted that the number of students who learn by role-plays, mock interviews and related activities in online classroom are less.

Due to pandemic, many physical classrooms have shifted to online. From the results of this research, it can be concluded that 50 % of the respondents are in the favor that the quality of education has not been affected by this conversion while the other 50% have the different opinion. Students are not learning English online as effectively as they were in traditional classroom. The students' response to adapt to online learning experiences is not positive. Students are more comfortable to learn in the physical classroom as compared to online classroom.

Different students have different capabilities and preferred learning styles. Learning styles play vital role to determine teaching styles. The students were asked if they had tailored their preferred learning style to enhance the online learning experiences. It was told that the students were capable to tailor their learning style according to contextual demands as the online environment failed to complement their preferred style. However, this decreased the student's learning outcomes. Therefore, it is very important for an educator or teacher to adopt such innovative techniques and teaching styles which can fulfill their learning needs.

It can be concluded that students also have different preferred learning styles (tactile, visual, auditory and kinesthetic) in order to learn online. Students are capable to change their preferred learning styles according to contextual demands but this change decrease their language learning outcomes. Teachers should adopt teaching styles in accordance to the learning styles of the students to enhance their learning experiences. Therefore, instructors should discover the learning styles of the students to provide quality online education. Educators can use online free tools that can create audio, video, sound, hands-on activities to enhance student's online learning.

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