

Learning Style Will Affect Learning Effectiveness

Zongmiao Liu^{1,a,*}

¹University of Connecticut, 369 Fairfield Way, Storrs, CT 06269, United States

a. Zongmiao.liu@outlook.com

*corresponding author

Abstract: In this study, the author compared two types of learning styles based on the same course: online synchronous learning and face-to-face synchronous learning. Researchers are monitoring a semester of education. The overall course GPA, test, activity, and final examination scores are measured and compared. This experiment contained a relatively average sample size of 400 students from four different cultures. This study aims to understand how students from different cultures learn and how the learning style (online and face-to-face) will affect how students perform in their academics. In the final conclusion, it can be proved that different learning styles do affect the effectiveness of students' learning.

Keywords: online learning, face-to-face learning, learning style, learning effectiveness

1. Introduction and Background

Due to the pandemic, knowing how to use the Internet is essential in modern society. Everyone starts to use the online platform to do their work and study. However, students from different cultures have different opinions about this learning style. Some think online learning is the best way to study, while others don't. Many studies have demonstrated students have their preferences in learning, whether online or face-to-face [1].

Online do have many advantages compared to in-person learning. For example, space advantage: With the comprehensive development of online education, people can study directly at home, reducing the cost of space. The most common topic will be English training in China. For example, children can practice their English on the Internet, and really do not go out to learn all over the world.

Another advantage when comes to online learning is time advantage. Online than offline education, more of an edge is online education can also support review after class, meaning that when individual forget the knowledge points, are distracted, or listening to a class, this individual can, of course, learn, no matter when and where, as long as one wants to revisit instantly. The time in online education is broad, and there is no time limit, which is better for people to arrange their own time.

However, face-to-face teaching still has its advantages. It is conducive to the communication and emotional exchange between teachers and students and gives full play to the role of emotional factors in education. It has a positive significance for cultivating students' language expression ability, ideological quality, and modal goals. In the teaching process, teachers can divide students into groups, which is more conducive to the design and organization of teaching activities and effective management of teaching activities.

Therefore, one came up with a question: **Do online vs. F2F learning experiences vary in the effectiveness of learning for different cultures?** Culture is always a topic that people want to find

out more about. With quarantine happening these days, one wonders if online learning has a different effect on students' learning effectiveness than F2F.

The study by Linda Fang [2] concluded that students' perceptions of what was valuable and practical happen to be influenced by their nationalities, ethnicities, and internet cultures. Even though the find is interesting, there are limitations as well. The sample is too narrow. Only Singaporean Chinese were involved, which cannot represent all people from Singapore; therefore, leave this study not rigorous. An article titled: Learning Style and Effectiveness of Online and Face-to-Face Instruction [3] suggested that there are no significant differences between online and face-to-face learning; therefore, the researchers assume that the learning preference and type did not affect the study. Although this research paper looks promising, there are still some minor flaws. There is only a total of 62 participants, a sample size that is as small as this cannot lead researchers to assume such a conclusion.

This study hypothesizes that interdependent students will perform better through the face-to-face learning style, and independent students will perform better through the online learning style.

From the current findings, it is unclear whether those in face-to-face classes had similar perspectives on quality standards for (a) their course structure, instructional technology use, and instructor [4] or (b) whether they would also exhibit differences between preference towards online and face-to-face courses [5].

The center of this study used questionnaires and actual courses to investigate the main questions mentioned above: Does learning style affect learning effectiveness? Are there differences between online learning and non-online learning in different cultural contexts? It also points out that students from different cultures may be more comfortable with different learning styles. A uniform learning style may lead to a group of student's progress is not so obvious.

2. Participants and Method

2.1. Participants

The sample size was relatively large: 400 students from international high schools from around the world. Among the 400, there are 100 from the United States, 100 from England, 100 from China, and 100 from Japan. It was decided that 50 students would study synchronously online for their respective cultures, and 50 students would study synchronously face-to-face for their respective cultures.

2.2. Procedure

The purpose of this study is to determine how learning styles affect the performance of students. Firstly, a survey was used to identify whether the student was coming from an independent culture or an interdependent culture. As part of this study, participants are required to take the same class (for instance, calculus/statistics) and be monitored by the researchers for the entire semester. As a part of the study, in order to determine which learning style helped students from various cultures perform better, we compared students' activity scores, weekly test scores, final grades, and GPA scores during the study period to determine which method led to better performance. Researchers analyzed their daily performances to determine the means and standard deviations of their grades and GPAs based on the analysis of their daily performances.

First, in this experiment, a small test called MBTI was used to select which students were more interdependent and which were more independent. After that, in the survey, questions will be used such as: on a scale of 1 to 10, how satisfied do you think you are with your learning style?

2.3. Materials

An online learning style can be described as synchronized classes, which allow the students to interact with their peers and teachers over a web-based platform, without having physical interactions with one another in the classroom (not a video-based class). There is a type of learning style called face-to-face learning: A class that has synchronous required courses that allow students to interact with their peers and teachers in a physical setting.

Table 1: Effectiveness of Course.

Effectiveness	FTF	Online
This Course Was...Than Typical FTF Course	Comparison of This Course With Typical FTF Course (%)	Comparison of This Course With Typical FTF Course (%)
More effective	37	32
Same effectiveness	63	64
Less effective	0	4

Note: FTF = face-to-face. No significant differences between the two courses ($p < .05$).

From table 1, the differences between face-to-face and online learning style are not very significant. However, 4% of students think that for the specific class, online learning style is less effective than typical FTF course, compared to 0% of student think FTF is less effective.

Table 2: Effectiveness of Course Activities.

Face-to-Face	Online					
Activity	Very Effective (%)	Effective (%)	Not Effective (%)	Very Effective (%)	Effective (%)	Not Effective (%)
Chapter pretests*	56	31	13	64	32	4
Lectures	75	25	0	86	14	0
Thoughts for day	31	50	19	50	45	5
Discussions	88	12	0	73	27	0
Assignments	50	50	0	73	27	0
Student presentations	32	50	18	45	45	10
Chapter reviews*	56	38	6	86	14	0
Chapter posttests	50	44	6	68	32	0

*Significant at the .05 level.

Tables from Neuhauser[3].

From table 2, more students agreed that for chapter pretests, lectures, thoughts for day, assignments, student presentations, chapter reviews, and chapter posttests, online learning is more effective than face-to-face learning. However, for discussions, students prefer face-to-face learning more than online learning. It is interesting to see that for most of course related works, students prefer online

style instead of face-to-face. When comes to real conversation (discussions), face-to-face is more effective than online.

3. Results

As this experiment has not been done, the hypothetical results that I have will be like my hypothesis: interdependent students will perform better through face-to-face learning. Independent students will have better performance through the online learning style.

The mean between these variables is significant. Interdependent students (Japanese and Chinese students) performed better in a real classroom scenario; however, independent students (American and European students) performed better on the online platform. Although online study has benefits, face-to-face learning is still the way for one to learn better.

4. Conclusion

Students learning style is actually an important decision point that determines the effectiveness of learning. New York Times bestselling author Tim Sanders once said, "Education without application is just entertainment."

Learning style has a great influence on learning quality and efficiency. Different countries have different learning styles due to different regional cultures and educational systems. Of course, even within the same region and education system, different people will have different learning styles.

For future studies, I have some suggestions. First, including other ethnic groups; second, test differences in student learning styles [6]. Third, compare students from different backgrounds. Finally, consider students' other gender.

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