Knowledge Brings People Confidence – Is This a Pseudo Proposition?

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ABSTRACT

This is a period where the pandemic caused by the virus COVID-19 has prevailed globally, and online learning has become a necessity to most students, not just an option. However, it has been noticed by many people that the effectiveness of this form of education is inconsistent. There are numerous friends around complaining about the sudden change and bad results. This empirical research aims to find out the cause of the difference and the obstacles, and we start from the essential part of students' study process, self-efficacy, and motivation. It is proven that this factor is one of the essential parts determining students' study effectiveness. We want to find out the correlation between educational background and this critical factor affecting online student study. The result is generally negative, with some cases showing a positive correlation.

Keywords: education, self-efficacy, education background

1.INTRODUCTION

The research that we have now suggests that many factors influence the efficiency of students studying, especially smartphones. The research displays a correlation between low self-efficacy and high distraction/ inefficiency of work [1]. As a source of distraction that we could not eliminate, since the smartphone is something undividable in today's lives, self-efficacy seems to be a more reliable, controllable factor to minimize the distraction and following negative results.

Another research has pointed out how motivation has driven the students toward different resulting grades of online learning, which largely overlaps with self-efficacy [2]. The research summarizes two kinds of motivation, interpreted as 'intrinsic motivation' and 'extrinsic motivation.' The former includes attention, relevance, confidence, and satisfaction, and the latter includes a clear goal, skill, and challenge. Self-efficacy, to some extent, is the extension of confidence, and it is primarily for the confidence of completing a certain amount of work. Thus, this research provides the material of the possible hypothesis.

Two kinds of research indicate several possible confound variables in this investigation, one of them is the extent of the arousal of the lecturer. The research points out that the teacher's arousal toward students demonstrates a specific effect on the final result (effectiveness of online learning). This influence on the dependent variable (students' grades) would diminish the reliability of the investigation [3]. Of course, this is only a part of the possible confound variables, which also include design factor, technical factor, course factor [4], and there is a study showing these factors have correlations with the self-efficacy, proving such factors do affect the dependent variable, making the result less reliable.

The study's hypothesis assumes the positive correlation between education background and self-efficacy/ motivation [5].

2. DESIGN

This experiment is designed to be a survey that aims at university students and is distributed online. The previous research that uses this questionnaire shows high reliability, and it investigates four areas of people's internal conditions that influence the grade of the exam, including effectiveness, strategy, motivation, attitude, monitoring, willpower, and, most importantly, self-efficacy [6]. Apart from finding out the self-efficacies, this pilot research also considers the educational background of the involved participants, and this is also

the part of the investigation that is different from the precedented study. Thus, the independent variable is the education background, and the self-efficacy/ motivation is the independent variable [7].

The software (instrument) we adapted involves two. The first one, Wenjuanxing, is for trial and has comparatively limited functions. The second one is used for formal information collection, and we use quadratics to design the whole questionnaire.

The questionnaire is given on the website. (https://qfreeaccountssjc1.az1.qualtrics.com/jfe/form/SV _0qZRz0bFo2tkJsG).

Table 1 shows the educational background of the participants, and Table 2 introduces the proportion of different majors of the participants. Figure 1 and Table 3 shows the proportion of each race in the investigation and the correlation between students' motivation/self-efficacy.

Table 1. Participants (Educational background)

Level of Education	The number of Participants
College/University	36
High School (Grade 10-12)	32
Middle School (Grade 6-9)	15
Below Middle School	1
Prefer Not to Answer	1
Other	0
Total	85

Table 2. The proportion of different majors

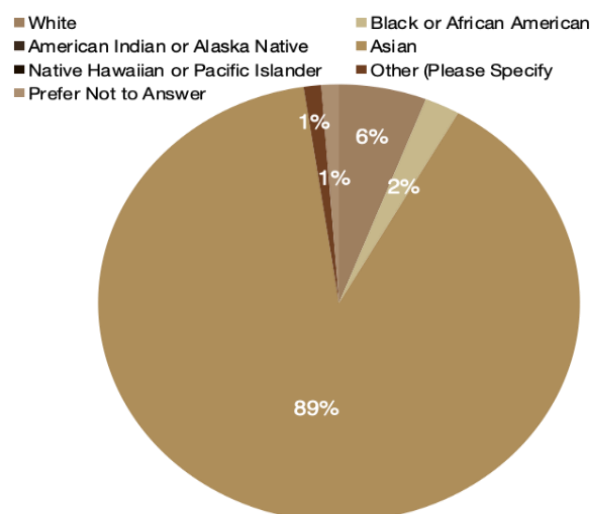| Arts and Humanities	17.17%	n=17
Business	20.20%	n=20
Health and Medicine	3.03%	n=3
Interdisciplinary Studies	1.01%	n=1
Public and Social Services	1.01%	n=1
Science, Math, Tech	22.22%	n=22
Social Sciences	25.25%	n=25
Trades and Personal Service	1.01%	n=1
Other	4.04%	n=4
Prefer not to answer	5.05%	n=5

Figure 1 The proportion of each race in the investigation and the correlation between students' motivation/self-efficacy

Table 3. The correlation between the percentages of each race in the survey and students' motivation/self-efficacy

Motivation	Question 5 (Teachers...Learning)	Question 6 (E-learning...progress,etc.)	Question 7 (You often...and correct)	Question 8 (When I...else)	Question 9 (When learning... information)	Question 10 (I can... learning)	Question 11 (When ... learning)
Mean	2.6	2.8	2.7	2.9	3.4	2.6	3.0
Self-efficacy	Question 1 (If I try...the problem)	Question 2 (I can calmly...problems)	Question 3 (for me...a breeze)	Question 4 (Compared with...is better)			
Mean	1.9	2.0	2.1	1.8			

In Table 3, the correlation for self-efficacy is negative. Since the mean is of four related questions is 1.95, it is a moderate negative correlation.

On the other hand, it is clear that the correlation is slightly positive for motivation since the majority of the participants are university. And the mean number of the data is above half, indicating the result shall be somewhat optimistic, but not entirely. Maximum 3.0 is 60% of the total, with a general mean of 2.9 out of 5; thus, it is correlational but not strong.

3.RESULT

The result partially supports the hypothesis, considering there is still some positive feedback in this college-students-majority survey statistics in the aspect of online learning self-efficacy. Therefore, it is reasonable to conclude that as the education background is higher, the self-efficacy is also higher [8-10]. Online education could be more applied to the university than middle school and high school in the future. The motivation shows a countering result, but should not be prioritized. Since self-efficacy contributes to the success and achievements to a large extent. The limitations exist, which is the lack of supervision on the accomplishment of the surveys, but the reliability is generally acceptable, shown below (Table 4, 5, 6).

Table 4. Inter-item correlation & Cronbach's Alpha if Item Deleted for self-efficacy

	Question 7	Question 8	Question 9	Question 10
Question 7	1.000	0.662	0.333	0.337
Question 8	0.662	1.000	0.454	0.226
Question 9	0.333	0.454	1.000	0.160
Question 10	0.337	0.226	0.160	1.000
Items	Cronbach's Alpha if Item Deleted			
Question 11	0.722			
Question 12	0.793			
Q Question 13	0.792			
Question 14	0.745			

Table 5. Inter-item correlation and Cronbach's alpha if item deleted for motivation

	Question 11	Question 12	Question 13	Question 14
Question 11	1.000	0.518	0.570	0.652
Question 12	0.518	1.000	0.401	0.513
Question 13	0.570	0.401	1.000	0.476

Question 14	0.652	0.513	0.476	1.000
Items	Cronbach's Alpha if Item Deleted			
Question 7	0.531			
Question 8	0.532			
Question 9	0.667			
Question 10	0.737			

Table 6. Cronbach's Alpha

Subscales	Cronbach 's Alpha
E-learning Self-efficacy	0.689
E-learning Willpower	0.705
E-learning Motivation	0.812
E-learning Effectiveness	0.786

4.CONCLUSION

As the pandemic caused by the COVID-19 virus spreads across the globe, online learning has become a way for students at all levels to learn. Through the data survey, this paper concludes that the higher the degree of students, the higher the sense of self-efficacy, the better the learning effect. In the future, online education may be more used in universities than junior and senior high schools. Therefore, students must improve their self-efficacy to improve their learning efficiency.

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