

# Online Study Behavior and Social Learning Support as Predictors to Student Learning Outcome in Science

Algones, Christine Jill and Israel, Gina Fe

christinejillalgones@umindanao.edu.ph/ginafe\_israel@umindanao.edu.ph

Faculty-University of Mindanao Tagum College, Tagum City, Davao del Norte, 8100, Philippines

## Abstract

This study aimed to determine if online study behaviour and social learning support were predictors of student learning outcomes. Five hundred students of UM Tagum College from different programs were the respondents of this research. The statistical tools used were Mean, Pearson-r, and Multiple Regression Analysis. Quantitative non-experimental research utilizing correlational techniques with regression analysis was the research design of this paper. The level of online study behavior yielded a very high result in course completion and student satisfaction, while motivation yielded high results. The story of social learning support yielded a very high impact in terms of emotional and appreciation Support, while Instrumental Support yielded a high mark. There was a significant relationship between online study behavior and social learning support to student learning outcomes. The two independent variables significantly predict the student learning outcome. However, the student satisfaction indicator was not substantially predicted the student learning outcome.

**Keywords:** degree, online study behavior, social learning support, student learning outcome, Philippines

## 1. Introduction

In recent years, empirical studies suggest a dramatic deterioration of learners' literacy since learners' needs are unmet, and the student learning outcomes need to be established. Likewise, a vague learning objective yields poor results. With this, to create meaningful learning, educators must focus on the student learning outcome as the basis for enhancing the quality of teaching. However, there needs to be more consistency in the curriculum. Even the learning assessments must match the intended learning outcome, which impedes the meaningful acquisition of learning competencies, resulting in better and more competent learners (Fayer, 2017). Also, beyond that, yet cheap and easy internet access impacts how students learn by allowing them to explore all kinds of information related to the material they are studying within the context of learning activities (Fitriasari et al., 2018).

In addition, the learning outcomes in question are the results that must show a change in the behavior that is permanent, functional, positive and conscious. With the completion of the entire learning process, students can redefine what is known and understood, and this will be the proof they may obtain as a result of Cedefop's learning (Harris, 2019: 25). Also, learning outcomes are written statements of what the successful student/learner anticipated to be able to accomplish at the end of the program module/course unit or qualification (Adam, 2004). Unfortunately, learning outcome has dramatically been affected by the shift of learning mode, curriculum design and the teaching that many researchers discussed have the effects of personal characteristics or learning behaviors on learning performance. There is a decline in the learning competencies, which the learners profoundly demonstrate in the sudden shift of learning modality. Furthermore, the significant difference between learning mode and learning outcome is that learning mode affected learning outcome became insignificant after using the multimedia-assisted teaching materials (Kristen, 2011; Martin & Herrero, 2012; Jude et al., 2014)

The pandemic of COVID19 moved every higher education institution towards online learning of the school. However, nobody was prepared for this transition, and many students are affected by this pandemic. Many studies recognized the shift towards online learning as forceful used, but more importantly, for continuing the learning process (Bao, 2020; Halim, Hashim, & Yunus, 2020; Hodges, Moore, Lockee, Trust, & Bond, 2020; Yee, 2013; Zhu, Chen, Avadhanam, Shui, & Zhang, 2020). The pandemic COVID19 around the world has forced educational institutes, including instructors and learners, to move online, with which they were unfamiliar (Henriksen, Creely, & Henderson, 2020).

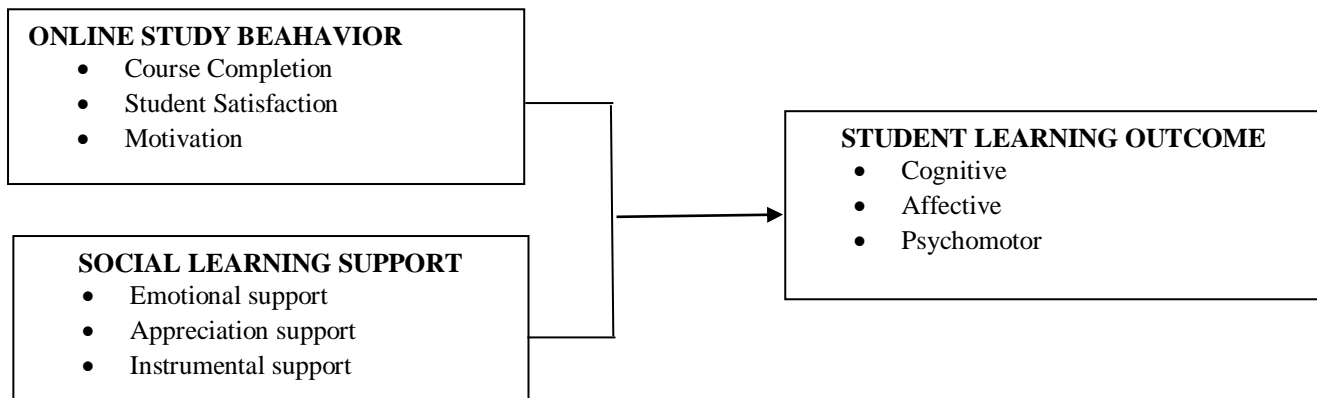
Indeed, this study impelled the researcher to study the possible factors or variables that may influence the online study behavior on the learning outcome of students. This study examines the relationship between online study behavior and students' learning outcome. Additionally, the consequence would be helpful to teachers and students, for they will be

equipped to understand the online student's behavior and the learning outcome. It will be alleviated due to the well-managed teachers, thus the urgency to conduct the study.

Figure 1 shows the conceptual framework of the study. The independent variable is online study behaviour with the following indicators: course completion, student satisfaction, and motivation. The second independent variable is social learning support which is supported by (Marhamah & Hamzah, 2016, p. 151; Ati et al. 1,2018) with the following indicators, namely: emotional support, affection support, and instrumental support. Lastly, the dependent variable of the study is student learning outcomes, which is supported by Dwidayani (2013) states that Learning outcomes are measures of success or failure of students after taking teaching and learning activities both in terms of practical, psychomotor, and cognitive which includes knowledge (memory, understanding, application (application)).

#### INDEPENDENT VARIABLES

#### DEPENDENT VARIABLE



*Figure 1. Conceptual Framework of the Study*

## 1.2. Research Objectives

This study was conducted to determine if Online Study Behavior and Social Learning support predict the Student Learning Outcome. Specifically, it sought to:

1. To describe the level of Online Study Behavior in terms of:
  - 1.1 Course completion;
  - 1.2 Student satisfaction; and
  - 1.3 Motivation
2. To determine the level of Social Learning Support towards the Learning Outcome of Students in terms of:
  - 2.1 Emotional support;
  - 2.2 Appreciation support;
  - 2.3 Instrumental support;
3. To describe the level of Student Learning Outcome in terms of:
  - 3.1 Cognitive;
  - 3.2 Affective;
  - 3.3 Psychomotor;
4. To determine the relationship between:
  - 4.1 online study behaviour and student learning outcome; and
  - 4.2 social learning support and student learning outcome.
5. To determine which domain in Online Study Behavior significantly predicts Student Learning Outcome.
6. To determine which domain in Social Learning Support significantly predicts Student Learning Outcomes.

## 2. Method

### 2.1 Research Design

This study used the quantitative, non-experimental design utilizing regression analysis and descriptive correlational. McBourney and White (2010) said that non-experimental research, often called correlation research, seeks causes of behavior by looking for correlations among variables. It seemed appropriate to use this technique since the current study intends to analyze patterns and averages on the collected data. Likewise (Cash, Štorga & Stanković (2016), a non-experimental approach was adopted when the research question that underscores the entire research is about causal relationships.

### 2.2 Population and Sample

The respondents of this study were the 2nd year and 4th year undergraduate students who experienced online learning modality for the 1st Semester of SY 2021-2022 across academic programs of UM Tagum College, wherein a total of 2, 965 population. The researcher used stratified sampling technique to determine the participants in gathering data. These students were considered since they demonstrated: factual, conceptual, procedural, and metacognitive knowledge in line with the new mode of teaching-learning delivery utilizing the virtual environment. The study did not include those first-years enrolled in 1st Semester of SY 2022-2023. The researcher will not restrict nor force the target respondents to answer and participate in the study conducted.

### 2.3 Data Collection Procedure

The researcher secured a permission letter from the School Director to conduct the study. Upon approval of the Director/, the researcher personally administered the questionnaires to the respondents. Furthermore, the researcher personally conducted the survey and explicated the intention of the research to the respondents during its administration, as well as the necessary instructions. The respondents were given ample time to answer the questionnaires. After retrieving all the questionnaires, the Collation and tabulation of data followed. The researcher did the Collation, encoded it, and submitted it to the statistician for the appropriate statistical treatment. The tabulated data were analyzed and interpreted according to the problem raised in the first chapter.

## 2.4 Statistical Tools

The following statistical tools were used in this study in interpreting the data to be gathered by the researcher:

**Mean.** This was used to measure the level of students' online study behavior. Also, this statistical tool will be used to answer sub-problems 1, 2, and 3 raised in Chapter 1 of this paper.

**Pearson-r.** This was used to describe the significance of the relationship between online study behavior and student learning outcome and social learning support and student learning outcome. Also, this tool was used to answer sub-problems 4.1 and 4.2 mentioned in chapter 1.

**Multiple Regression Analysis.** This was used to determine if online study behavior and social learning support significantly predict student learning outcomes. Likewise, the tool will be used to answer sub-problem five, raised in chapter 1.

## 3. Results

Results, analysis, and intervention drawn out from the conduct of the study are introduced in this part. The data presented were both in tabular and textual forms. All inferential results were analyzed and interpreted at a 0.05 level of significance. Chronologically, tables and interpretation were arranged in the subsequent subheadings: level of online study behavior, level of social learning support, level of student learning outcome, the significance of relationship between online study behavior and social learning support to student learning outcome, and regression analysis on online study behavior and social learning support as a predictor of student learning outcome.

The standard deviation was used to determine the error on unknown samples. It cannot be noted that the standard deviation ranges from 0.66-0.84, which is lesser than 1.0 as the typical standard deviation for the 5-point Likert scale (Wittinker & Bayer, 1994). This means that the ratings in the accomplished questionnaires are closed to the mean, indicating the consistency of responses among the students.

### Level of Online Study Behavior

The mean scores for online study behavior, with an overall mean of 4.24, described as very high with a standard deviation of 0.47, are presented in Table 1. The high level could be attributed to the increased rating given by the respondents in all indicators regarding course completion, student satisfaction, and motivation. The cited total mean score was the outcome acquired from the subsequent computed mean scores indicators: 4.29 or very high for Student satisfaction; 4.24 or very high for Course completion; 4.19 or high for Motivation.

Table 1. Level of Online Study Behavior

Indicator	Mean	SD	Descriptive Equivalent
Course Completion	4.24	0.52	Very High
Student Satisfaction	4.29	0.56	Very High
Motivation	4.19	0.53	High
Overall	4.24	0.47	Very High

The highest mean score of 4.29 with a standard deviation of 0.56, which is described as very high, was gained by student satisfaction. The data indicated from appended Table 1.2 reveal that the respondents have observed the following order of importance: a mean of 4.34 for *teacher's teaching methods*, which is described as very high; a mean of 4.32 for lesson plans practiced in school, school teachers evaluating students, learning guidance by school, which is defined as very high; a standard of 4.30 for learning styles and school spirit, which is described as very high; a mean of 4.29 for practicability of courses by the school, which described as very high; a standard of 4.25 for evaluating method of studies, practicing theory courses by the school, which described as very high; a mean of 4.23 for updating speed knowledge of teacher, which told as very high; a standard of 4.22 time management arrangement in school curricula, which described as very high.

The second highest mean score was gained by course completion, with a mean of 4.24 and a standard deviation of 0.52, described as very high. The data shown in appended Table 1.1 bring to light that the respondents have observed the following order of importance: a mean of 4.36 for understanding the course objectives, which is described as very high; a standard of 4.32 for believing that the course is well organized, which is defined as very high; an average of 4.29 for understanding the feedback in the assessment in which very helpful, which is defined as very high; an average of 4.28 for acknowledging the course structured to achieve the learning outcomes, which is described as very high; a mean of 4.25 for managing to understand the lectures, which is defined as very high; a standard of 4.29 for knowing the pace the course was appropriate, which described as very high; an average of 4.20 for realizing the system stimulated interest in the subject area, which is defined as high; an average of 4.19 for reflecting the method of assessment is reasonable, which described as high; a mean of 4.15 for visualizing the environment in the class is conducive in learning, which described as high; and, a standard of 4.10 for realizing the course workload were manageable, which described as high.

Thirdly, motivation posted the third- highest mean of 4.19 with a standard deviation of 0.53, described as high. The data stipulated in appended Table 1.3 unveil the following order of importance observed by the respondents: a mean of 4.39 for knowing the most satisfying thing in the course possible, which is described as very high; a mean of 4.36 for learning the difficulty of the system, which described as very high; a mean of 4.32 for satisfying when getting a good grade, which described as very high; a standard of 4.28 for own understanding fault in the material in the course, knowing the important thing is getting a good grade, which described as very high; a mean of 4.21 for preferring course materials that challenge new things, which described as very high; a standard of 4.20 for thinking well in the class, which described as very high; a mean of 4.06 for wanting better grades in the class, which described as high; a mean of 3.95 for believing an excellent grade, which described as high; a mean of 3.82 for thinking doing good compared with other students, which described as high.

### **Level of Social Learning Support towards Student Learning Outcome**

The mean scores for indicators of social learning support, with an overall mean of 4.33, described as very high with a standard deviation of 0.49 were presented in Table 2. The very high level could be attributed to the increased rating the respondents gave in all indicators regarding Emotional Support, Appreciation Support, and Instrumental Support. The cited total mean score was the outcome acquired from the subsequent computed mean score from the highest to lowest indicators: 4.52 or very high for the emotional support: 4.27 or very high for appreciation support, and 4.20 or high for instrumental backing.

Table 2. Level of Social Learning Support towards Student Learning Outcome

Indicator	Mean	SD	Descriptive Equivalent
Emotional Support	4.52	0.51	Very High
Appreciation Support	4.27	0.63	Very High
Instrumental Support	4.20	0.62	High
Overall	4.33	0.49	Very High

The highest mean score of 4.52 with a standard deviation of 0.51, which is described as very high, was gained by the emotional support. The data indicated from appended Table 2.1 reveal that the respondents have observed the following order of priority: a mean of 4.61 for *knowing teachers want students to respect each other's ideas*, which is described as very high; a standard of 4.60 for *learning teachers encourages to be respectful of other students' ideas in class*, for *knowing teachers want all students to feel respected*, which is described as very high; a mean of 4.55 for *thinking students should be respected*, which is described as very high; a standard of 4.52 for *appreciating teachers care how we feel*, which is defined as very high; a mean of 4.50 for *knowing that teachers treat in the class fairly*, which is described as very high; a mean of 4.47 for *thinking students should be respected*, for *acknowledging teachers available to help students when having questions*, which is defined as very high; a mean of 4.46 for *believing teachers consider students' feelings*.

The second highest mean score was gained by appreciation support, with a mean of 4.27 and a standard deviation of 0.63, described as very high. The data shown in appended Table 2.2 bring to light that the respondents have observed the following order of importance; a mean of 4.38 for *knowing my family is willing to help my decisions*, which is described as very high; a standard of 4.37 for *having friends to help me*, which is defined as very high; a mean of 4.31 for *counting my friends when things go wrong*, for *having my family willing to help me*, which is defined as very high; a mean of 4.29 for *having friends who I can share my joy and sorrows*, which is defined as very high; a standard of 4.28 for *having a particular person in my life who cares about my feelings*, which is defined as very high; a mean of 4.27 for *having a specific person in my life who cares about my feelings*, which is described as very high; a mean of 4.21 for *talking my problems with my friends*, which is defined as very high; a mean of 4.15 for *having a particular person who comfort me*, which is defined as high; a mean of 4.09 for *talking my problems with my family*, which is defined as high.

Thirdly, instrumental support posted the third highest mean of 4.20 with a standard deviation of 0.62, described as very high. The data presented in Table 2.3 uncover that the respondents have observed the following order of importance: a mean of 4.28 for *having a parent that makes sure what I need*, which is described as very high; a standard of 4.25 for *having a parent that supports my decisions*, which is described as very high; a mean of 4.21 for *enjoying spending time with the peer*, which is described as very high; a mean of 4.20 for *having a peer who can count on*, for *having a parent helps cope with the problems*, which is described as very high; a mean of 4.19 for *having a peer explain the things I don't understand*, which is defined as high; a mean of 4.18 for *thinking a peer vital to me*, which is described as high; a mean of 4.17 for *having peer comfort when I am upset*, which is defined as high; a mean of 4.12 for *having a peer that cares about me and makes me feel wanted*, which is described as high.

### Level of Student Learning Outcome

The mean scores for the indicators of student learning outcomes, with an overall mean of 4.21 described as very high, with a standard deviation of 0.50 were presented in Table 3. The high level could be attributed to the increased rating the respondents in all cognitive, affective and psychomotor indicators. The cited total mean score was the outcome acquired from the subsequent computed mean scores from the highest to lowest hands: 4.26 or very high for psychomotor; 4.19 or high for affective; and 4.19 or high for cognitive.

Table 3. Level of Student Learning Outcome

Indicator	Mean	SD	Descriptive Equivalent
Cognitive	4.19	0.53	High
Affective	4.19	0.58	High
Psychomotor	4.26	0.57	Very High
Overall	4.21	0.50	Very High

The highest mean score of 4.26 with a standard deviation of 0.57, described as very high was gained by Psychomotor. The data indicated from appended Table 3.3 reveal that the respondents have observed the following order of importance: a mean of 4.33 for knowing the assignments are pretty challenging, which is described as very high; a mean of 4.31 for making sure that concepts in lesson think of practical problems, which is defined as very high; a mean of 4.28 for knowing that assignments give clear instructions on what expected to do, which is described as very high; a mean of 4.27 for knowing that the course get feedback on how I am doing, for learning things beyond my control, which is described as very high; a mean of 4.26 for tackling assignment what would count as successful answer, for tending the lesson to real problems or situations, which is described as very high: a mean of 4.24 for having friends who will help me, which is defined as very high; a mean of 4.23 for establishing a learning plan to direct my activities in the lessons, which is defined as very high; a mean of 4.19 for receiving feedback very quickly, which is defined as high.

The second highest mean score was gained by affective, with a mean of 4.19 a standard deviation of 0.58, described as high. The data shown in appended Table 3.2 bring to light that the respondents have observed the following order of importance: a mean of 4.29 for quickly tell if someone else is interested or bored with what I am saying, which is described as very high; a mean of 4.25 *for trying to look at everybody's side of a disagreement* before I make decision, which is defined as very high; a mean of 4.24 for telling if someone else wants to enter a conversation, which is defined as very high; a mean of 4.23 for telling if someone is masking their true emotion, for spotting when someone in a group is feeling awkward or uncomfortable, which is described as very high; a mean of 4.21 for sensing if I am intruding even if the person does not tell me, which is described as very high; a mean of 4.17 for getting nervous when others around me seem to be worried, which is defined as high; a mean of 4.16 for predicting how someone will feel, which is defined as high; a mean of 4.14 for predicting what someone will do, which is described as high; a mean of 4.11 for getting emotionally involved with *friend's problem*, which is defined as high.

Thirdly, cognitive posted the third highest mean of 3.74 with a standard deviation of 0.81, described as high. The data presented in Table 3.1 uncover that the respondents have observed the following order of importance: a mean of 4.28 for suddenly wondering using a word correctly, which is described as very high; a standard mean of 4.24 for thinking of anything to say, which is defined as very high; a mean of 4.20 for daydreaming when listening to something, for communicating something and realize afterward that might be taken as insulting, which is described as very high; a mean of 4.19 *for listening to people's name when meeting them, for reading something and haven't been thinking* about it and must read it, which is described as high; a mean of 4.17 for remembering something although its the tip of my tongue , for having making up my mind, which is defined as high; a standard of 4.16 for hearing people speaking when I am doing something, which is described as high; a standard of 4.10 for doing one thing at home and not distracted into doing something, which is defined as high.

### Significance of the Relationship between Online Study Behaviors to Student Learning Outcome

Relatively, determining whether online study behaviour and social learning support have a significant relationship with student learning outcome is one of the objectives of this study. After that, Pearson-r was utilized to investigate the correlation between variables. Table 4 and 5 are present the analyzed and interpreted results of the significant relationship



between online study behavior and social learning support to student learning outcomes.

The gathered outcomes revealed that all indicators of Online Study Behavior course completion, student satisfaction, and motivation are significantly related to student learning outcomes. The r-value for the relationship between course completion and learning outcome is 0.448\*, while the r-value for the relationship between student satisfaction and learning outcome is 0.427\*, lastly, the r-value of the relationship between motivation and learning outcome is 0.526\*, which shows a positive correlation.

**Table 4. Significance of the Relationship between Online Study Behavior to Student Learning Outcome**

Indicators	Dependent Variable	r-value	r <sup>2</sup>	p-value	Decision
Course Completion	Learning Outcome	0.448*	0.2007	0.001	Reject H <sub>0</sub>
Student Satisfaction		0.427*	0.1823	0.001	Reject H <sub>0</sub>
Motivation		0.526*	0.2767	0.001	Reject H <sub>0</sub>

\* p < 0.05

Thus, the gathered outcomes revealed that social learning support is significantly related to student learning outcome. The r-value for the relationship between emotional support and student learning outcome is 0.436\*, while the r-value for the relationship between appreciation support and student learning outcome is 0.497\*, and lastly, the r-value for the relationship between Instrumental support and learning outcome is 0.553\*. Moreover, all of the indicators of Social Learning Support have significant connection to student learning outcomes.

**Table 5. Significance on the Relationship between Social Learning Support to Student Learning Outcome**

Indicators	Dependent Variable	r-value	r <sup>2</sup>	p-value	Decision
Support	Learning Outcome	0.436*	0.1901	0.001	Reject H <sub>0</sub>
Appreciation		0.497*	0.2470	0.001	Reject H <sub>0</sub>
Instrumental Support		0.553*	0.3058	0.001	Reject H <sub>0</sub>

\*p < 0.05

Furthermore, as presented in the table, the hypothesis that there is a significant relationship between online study behavior and social learning support to the student learning outcome.

#### **Regression Analysis on Online Study Behavior and Social Learning Support as Predictors of Student Learning Outcome**

Table 6 and 7 present the regression analysis on online study behavior and social learning support to student



learning outcome. The table 6 shows a computed F-ratio of 80.32 and a p-value of 0.001, which means that online study behavior can significantly predict the student learning outcome when taken as a whole. The R-value is 0.552, indicating a positive relationship between online study behavior and student learning outcome. The overall R-squared is 0.304, indicating that 30.4 % of the variation in student learning outcomes is explained by online study behavior. The remaining percentage is accounted for other variables not included in the study.

**Table 6. Regression Analysis on the Domains of Online Study Behavior as Predictors of Student Learning Outcome**

Independent Variables	Unstandardized Coefficients		Standardized Coefficients Beta	t-value	p-value	Decision
	B	SE				
(constant)	1.763	.162				
●Course Completion	.134	.055	.139*	2.418	0.016	Reject H <sub>0</sub>
●Student Satisfaction	.082	.050	.092	1.644	0.101	Do not Reject H <sub>0</sub>
●Motivation	.365	.044	.385*	8.216	0.001	Reject H <sub>0</sub>

Dependent Variable: Learning Outcome

R= value: 0.552

F-value = 80.318

R<sup>2</sup>= 0.304

p-value = 0.001

Moreover, course completion has a beta of .139\* with a p-value of 0.001; student satisfaction has a beta of .092 with a p-value of 0.101\*; and motivation has a beta of .385\* with a p-value of 0.001. Only motivation and course completion has a corresponding p-value of 0.001, which is lesser than the 0.05 level of significance. Hence, course completion and motivation are significant predictors of student learning outcome. More so, student satisfaction does not significantly predict the student learning outcome. However, the course completion and motivation are predictors of student learning outcome.

On the other hand, Table 7 shows a computed F-ratio of 105.14 and a p-value of 0.001, which means that social learning support significantly predicts the student learning outcome. The R-value is 0.603, indicating a positive relationship between social learning support and student learning outcome. The overall R-squared of 0.364, indicating 36.4% of the variation in student learning outcome is explained by social learning support. Moreover, emotional support has a beta of .227\* with a p-value of 0.000; appreciation support has a beta of .141\* with a p-value of 0.006; and instrumental support has a beta of .353\* with a p-value of 0.000. Emotional, Appreciation and Instrumental support has a corresponding of 0.000, which is lesser than the 0.05 level of significance. Hence, the emotional support, appreciation support and instrumental support can significantly predict student learning outcome.

Table 7. **Regression Analysis on the Influence of the Domains of Social Learning Support to Student Learning Outcome**

Independent Variables	Unstandardized Coefficients		Standardized Coefficients Beta	t-value	p-value	Decision
	B	SE				
(constant)	1.534	.163				
●Emotional Support	.221	.037	.227*	5.964	.000	Reject Ho
●Appreciation Support	.112	.041	.141*	2.749	.006	Reject Ho
●Instrumental Support	.286	.041	.353*	6.898	.000	Reject H <sub>o</sub>

Dependent Variable: Learning Outcome

R-value= 0.603

F-value= 105.143

R<sup>2</sup>=0.364

p-value= 0.00

#### 4. Discussion

The data obtained on online study behavior, social learning support, and learning outcome are presented in this chapter. Further discussions are based on the findings shown in the previous section.

##### Level of Online Study Behavior

It was found that the online study behavior of students at UM Tagum College was high. This is because of the increased rating assumed by the respondents regarding course completion, student satisfaction, and motivation, which means that the level of online study behavior was much observed. Also, it means that the students learn the lesson plans practiced by the school, the school teacher evaluates students, learning styles, and school spirit and knows the difficulty of the course despite the challenges they encounter.

Various authors supported the high descriptive equivalent in the level of online study behavior. This was in parallel to the study of Watkins (2015), in which the development of practical study skills is much more critical for the online learners, especially in achievement and retention. Further, some studies have employed open-ended surveys to identify which online learning techniques respondents found helpful, or the researchers have summarized successful online behaviors/tips by interviewing successful online students or course instructors.

The high descriptive equivalent in the level of student satisfaction follows the study of Bates & Kaye (2014), in which when the expectations of the students achieve, then it leads to a higher satisfaction level for the students, as cited by Zhang et al., 2008, when the expectations of the students are not fulfilled then it might lead to lower learning and satisfaction with the course. The result also showed that teacher's teaching method, lessons plan practiced by the school, and school teachers evaluating students were mostly satisfied by students. Moreover, the high level of motivation is similar to the study of Bulic and Blazevec (2020), who suggested a reverse relation between student motivation with online teaching. The modern teaching methods and online environment increase student motivation to learn in that environment. They also suggested that when a student is delighted, they will also yield a high level of proficiency. In the context of this study, it revealed that the students were satisfied and motivated.

##### Group of Social Learning Support Towards Learning Outcome

The degree of social learning support toward learning outcomes was high. This is because of the increased rating assumed by the respondents in terms of emotional, appreciation, and instrumental support, which means that level of social learning support was much manifested. It means that the students know how to respect other students' ideas in class, appreciate how they feel, and treat the course fairly.

Various authors supported the high descriptive equivalent in the level of social learning support. This was in parallel to the study of (Martín-Albo et al., 2015; Hou et al., 2020) good social support can protect individuals under stress and has a generally beneficial effect on maintaining health and stabilizing the mood of individuals. Those who receive more support from family or friends have a more robust mental capacity and are more mentally and physically healthy. The high descriptive equivalent in the level of emotional support follows the claim of (Martín-Albo et al., 2015; Sterling et al., 2015) social support has a positive effect on health, can buffer the impact of stress, and provides emotional support and instrumental support so that individuals can better adapt to stress to improve health. Furthermore, a study conducted by Chiu (2004) found that when supporting small groups with the subject-matter, evaluating students' understanding before giving was the critical factor in how practical the support was.

Lastly, the high- level result in terms of instrumental support parallels the study of (Federici & Skaalvik, 2014b), in which it has been positively associated with effort and perceived task value. To engage the students in social learning support, the teacher wants the students in the class to respect each other's ideas, believe that teachers consider students' feelings and that students who have peers can comfort when upset.

### **Level of Student Learning Outcome**

It was found out that the degree of student learning outcome was high. This is because of the high rating given by the respondents in terms of cognitive, affective, and psychomotor, which means that the students' level of student learning outcome is much manifested. It means that the student starts doing one thing at home and is not distracted from doing something. It is quick to spot when someone in a group feels awkward or uncomfortable and establish a learning plan to direct activities in the lessons.

Various authors supported the high descriptive equivalent in the level of student learning outcome. This parallels Panigrahi, Srivastava, & Sharma's (2018) study, which found that integrating online learning with virtual communities could boost students' learning outcomes. Also, when the students perform beyond the average standard set by society in skills acquisition, cognitive performance, and affective attributes, they are considered excellent and resources that can be contributed meaningfully to society's future development (Olaitan, 2017).

Furthermore, the affective domain can facilitate the development of social work, students' value, ethics, aesthetic, and feeling (Allen & Friedman, 2010). Furthermore, he explained that positive attitudes come from positive actions or performances. In practical learning, feelings, attitudes, and values can shape someone's thinking and behavior. Additionally, according to Hoover and Giambatista (2009), the psychomotor domain increases the interest in learning; this domain is a dimension that can continuously activate a learning environment with high intensity to improve learning outcomes. This domain can be applied in giving assignments to students.

### **Significance on the Relationship between Online Study Behavior and Social Learning Support as Predictors of Student Learning Outcome**

The study showed a significant relationship between online study behavior and student learning outcome. The computed r-value for each relationship with a p-value of less than 0.05 indicated a positive relationship between the variables. The positive r-value showed a direct correlation between the variables, further suggesting that student learning outcomes increases as student's online study behavior increases. As their social learning support increases, the student learning outcome also increases. Conversely, student learning outcome decreases as online study behavior and social learning support decrease. The result follows (Saxena, Baber, & Kumar (2021) stated that there were some quality factors of online learning, such as assurance, responsiveness, and website content which were believed to be significantly positive impact on the online learning process.

Also, the study results of Eady and Lockyer (2013) state that educators and researchers may point to the potential of technology to increase learners motivation and engagement, cater to different learning styles, and improve students' learning outcomes. It also aligns with Panigrahi, Srivastava, & Sharma's (2018) study, which found that integrating online learning with virtual communities could improve students' learning outcomes. In addition, the result of the study also supported the findings of Yi Cheng et al. (2013) in which learning outcome expectations as the perceived consequences of a

behavior.

### **Regression Analysis on Online Study Behavior and Social Learning Support as Predictors of Student Learning Outcome**

The regression analysis of the variables under the study revealed that online study behavior predicts student learning outcomes. This finding was reported as reflected in the table where student satisfaction is not a predictor of student learning outcome posted a p-value lesser than 0.05. On the other hand, social learning support predicts student learning outcomes; however, when taken as a whole, both online study behavior and social learning support have a predictive ability to the student learning outcome. This implies that online study behavior also has a positive attitude towards student learning outcome and tend to have a high student learning outcome.

This is following the study (Amseke, 2018), wherein social support is a form of support or assistance in the form of comfort, care, appreciation, advice. Moreover, valuable information shows up from people with intimate social relationships with individuals who take in assistance. On the other hand, social support is essential because it has a relationship with several important outcomes, including academic achievement, academic motivation, academic effort, and academic achievement (Anandari, 2013).

### **5. Conclusions**

The researcher concluded that the level of online study behavior was high. Also, the level of social learning support was high as well. For the significant relationship between variables, both online study behavior and social learning support have a significant relationship with student learning outcomes of students. Furthermore, only student satisfaction was found not to predict student learning outcomes. However, when taken as a whole, both online study behavior and social learning support predict student learning outcome.

### **References**

- Adam, S, "Using learning outcomes. A consideration of the nature, role, application and implications for European education of employing 'learning outcomes' at the local, national and international levels", United Kingdom Bologna Seminar, Edinburgh, Scotland, 2004.
- Allen, K.N., & Friedman, B.D. (2010). Affective learning: Taxonomy for teaching social work values. *Journal of Social Work Values and Ethics*. 7(2), np.
- Alonso, F., López, G., Manrique, D. and Viñes, J.M. (2005), "An instructional model for web-based e-learning education with a blended learning process approach", *British Journal of Educational Technology*, Vol. 36 No. 2, pp. 217-235, available at: [www.fisme.science.uu.nl/publicaties/literatuur/2005\\_modelforwebbasedelearning.pdf](http://www.fisme.science.uu.nl/publicaties/literatuur/2005_modelforwebbasedelearning.pdf) (accessed January 2, 2017).
- Ateia, H. and Hamtini, T. (2016), "Designing and implementing of dynamic technique for detecting learning style using literature-based approach", *International Journal of Database Theory and Application*, Vol. 9 No. 6, pp.
- Anandari, D. S. (2013). Hubungan Persepsi Siswa atas Dukungan Sosial Guru dengan Self-Efficacy Pelajaran Matematika pada Siswa SMA Negeri 14 Surabaya (Relationship between Student Perception of Teacher Social Support with Mathematics Self-Efficacy on Student of SMA Negeri 14 Sur. *Jurnal Psikologi Pendidikan Dan Perkembangan*, 2(3), 210–217.
- Amseke, F. V., Daik, M. A., & Liu, D. A. L. (2021). Dukungan Sosial Orang Tua, Konsep Diri Dan Motivasi Berprestasi Mahasiswa Di Masa Pandemi Covid 19. *Jurnal Muara Ilmu Sosial, Humaniora, Dan Seni*, 5(1), 241. <https://doi.org/10.24912/jmishumsen.v5i1.9957.2021>
- Annamalai, N. (2018). How do we know what is happening in WhatsApp? A case Investigating pre-service teachers' online activity. *Malaysian Journal of Learning and Instruction*, 15(2), 207–225.

- Banbeis. (2018). Summary Statistics and Key Performance Indicators (KPI). Retrieved from BANBEIS: <https://data.banbeis.gov.bd/images/ban222.pdf>
- Bates, E. A., & Kaye, L. K. (2014). "I'd be expecting caviar in lectures": The impact of the new fee regime on undergraduate students' expectations of higher education. *Higher Education*, 67(5), 655–673
- Blair E (2015) A reflexive exploration of two qualitative data coding techniques. *Journal of Methods and Measurement in the Social Sciences* 6(1): 14–29.
- Bernard, R. M., Borokhovski, E., Schmid, R. F., Tamim, R. M., & Abrami, P. C. (2014). A meta- analysis of blended learning and technology use in higher education: From the general to the applied. *Journal of Computing in Higher Education*, 26(1), 87-122. Available at: <https://doi.org/10.1007/s12528-013- 9077-3>.
- Bird, K. A., Castleman, B., & Lohner, G. (2022). Negative impacts from the shift to online learning during the COVID-19 crisis: Evidence from a statewide community college system (EdWorkingPaper, pp. 20-299). <https://doi.org/10.1177/23328584221081220>
- Blikstein, P. (2011), "Using learning analytics to assess students' behaviour in open- ended programming tasks", *Proceedings of the 1st International Conference on Learning Analytics and Knowledge*, ACM, Alberta, pp. 110-116, available at: <http://dl.acm.org/citation.cfm?id=2090132> (accessed April 12, 2017)
- Bulić, M., & Blažević, I. (2020). The impact of online learning on student motivation in science and biology classes. *Journal of Elementary Education*, 13(1), 73-87
- Cash, P, Štorga, M, & Stanković, T (2016). An Introduction to Experimental Design Research, In *Synthesizing knowledge in design research*, pp.3-12. DOI: 10.1007/978-3-319- 33781-4\_1
- Champaign, J., Colvin, K.F., Liu, A., Fredericks, C., Seaton, D. and Pritchard, D.E. (2014), "Correlating skill and improvement in 2 MOOCs with a student's time on tasks", *Proceedings of the First ACM Conference on Learning@ Scale Conference*, ACM, Georgia, pp. 11-20, available at: <https://edocs.uis.edu/jcham4/www/p11-champaign.pdf> (accessed June 4, 2016).
- Chiu, M. M. (2004). Adapting teacher interventions to student needs during cooperative learning: How to improve student problem solving and time on-task. *American Educational Research Journal*, 41, 365–399. doi:10.3102/00028312041002365.
- Dwidayani, et al. 2013. Meningkatkan Hasil Belajar Mata Pelajaran IPS melalui Penerapan Model Inkuiri pada Siswa Kelas IV SD Inpres Bajawali Kecamatan Lariang Kabupaten Mamuju Utara. *Jurnal Kreatif Tadulako*, 3 (2).
- Eady, M. J., & Lockyer, L. (2013). *Tools for learning: Technology and teaching strategies*. Learning to Teach in the Primary School, Queensland University of Technology, Australia.
- Fayer, L. (2017). A Multi-Case Study of Student Perceptions of Instructor-Created Videos in Online Courses. *International Journal for Scholarship of Technology Enhanced Learning*, 1, 67-90.
- Fitriasari, P., Tanzimah, T., & Sari, N. (2018). Kemandirian belajar mahasiswa melalui blended learning pada mata kuliah metode numerik. *Jurnal Elemen*, 4(1), 18. [https://www.researchgate.net/profile/NovitaSari11/publication/322889467\\_Kemandirian\\_Belajar\\_Mahasiswa\\_Melalui\\_Blended\\_Learning\\_pada\\_Mata\\_Kuliah\\_Metode\\_Numerik/links/5eb115fc299bf18b9595b3bf/KemandirianBelajar-Mahasiswa-Melalui-Blended-Learning- pada-Mata-Kuliah-Metode-Numerik.pdf](https://www.researchgate.net/profile/NovitaSari11/publication/322889467_Kemandirian_Belajar_Mahasiswa_Melalui_Blended_Learning_pada_Mata_Kuliah_Metode_Numerik/links/5eb115fc299bf18b9595b3bf/KemandirianBelajar-Mahasiswa-Melalui-Blended-Learning- pada-Mata-Kuliah-Metode-Numerik.pdf)
- Giannini, S. (2020, 320). Come Together, now! Retrieved from UNESCO: [https://en.unesco.org/voices/covid19\\_unprecedented\\_education\\_emergency](https://en.unesco.org/voices/covid19_unprecedented_education_emergency)
- Harris, Roger. 2019. The Current Emphasis On Learning Outcomes. *International Journal Of Training Research*, Volume 17, 2019- Issue 2. (<https://www.tandfonline.com/doi/full/10.1080/14480220.201>

9.1644777. accessed 26 February 05:30 2021)

- Hoover, J. D., & Giambatista, R. C. (2009). Why have we neglected vicarious experiential learning?. In *Developments in Business Simulation and Experiential Learning: Proceedings of the Annual ABSEL conference* (Vol.36).
- Hughes, G. (2007), "Using blended learning to increase learner support and improve retention", *Teaching in Higher Education*, Vol. 12 No. 3, pp. 349-363, available at: <http://eprints.ioe.ac.uk/2022/> (accessed August 8, 2016).
- Jude, L. T., Kajura, M. A., & Birevu, M. P. (2014). Adoption of the SAMR model to assess ict pedagogical adoption: A case of Makerere University *International Journal of e-Education, e-Business, eManagement and e-Learning*, 4(2), 106-115.
- Katz, D. L., Katz, C. S., Treu, J. A., Reynolds, J., Njike, V., Walker, J., & Michael, J. (2011). Teaching Healthful Food Choices to Elementary School Students and Their Parents: The Nutrition Detectives™ Program\*. *Journal of School Health*, 81(1), 21-28.
- Marhamah, F, & Hamzah, H.B. (2016). The Relationship Between Social Support and Academic Stress Among First Year Students At Syiah Kuala University, *Jurnal Psikoislamedia*, 42(1), 14-20.
- Macfadyen, L.P. and Dawson, S. (2010), "Mining LMS data to develop an 'early warning system' for educators: a proof of concept", *Computers & Education*, Vol. 54 No. 2, pp. 588-599, available at: <https://pdfs.semanticscholar.org/66d9/eafd07ea90dd1796f35ed439016ab0f5a389.pdf> (accessed August 8, 2016).
- Mangangantung, J. M., Wentian, S., & Rorimpandey, W. H. F. (2022). Pengaruh Kreativitas Guru dan Motivasi Belajar Siswa Terhadap Hasil Belajar Siswa Kelas V SD Negeri di Kecamatan Wanea. *Jurnal Inovasi Teknologi Pendidikan*, 9(1), 15–24. <https://journal.uny.ac.id/index.php/jitp/article/view/4994>
- Mcburney, D. & White, T. (2010). *Research methods: examples and explanation series*. ed. 8, Cengage Learning. Retrieved from [https://books.google.com.ph/books/about/Research\\_Methods.html?id=AUDoySe\\_EC&redir\\_esc=y](https://books.google.com.ph/books/about/Research_Methods.html?id=AUDoySe_EC&redir_esc=y)
- Martín-Albo, J., Lombas, A. S., Jiménez, T. I., Valdivia-Salas, S., Núñez, J. L., and León, J. (2015). The mediating role of relatedness between repair and loneliness: a preliminary model in high school students. *J. Happiness Stud.* 16, 1131–1148. doi: 10.1007/s10902-014-9550-3
- Montenegro, E., & Jankowski, N. A. (2017, January). Equity and assessment: Moving towards culturally responsive assessment. (Occasional Paper No. 29). Retrieved from <https://learningoutcomesassessment.org/documents/OccasionalPaper29.pdf>
- Nasrah, A. M. (2020). Analisis Motivasi Belajaar dan Hasil Belajar Daring Mahasiswa Pada Masa Pandemi Covid-19. *Riset Pendidikan Dasar*, 3(2), 207–213.
- Olaitan, A. W. (2017). Impact of family structure on the academic performance of secondary school students in Yewa local government area of Ogun State, Nigeria. *Int. J. Soc. Anthropol. Res.* 3, 1–10.
- Panigrahi, R., Srivastava, P. R., & Sharma, D. (2018). Online learning: Adoption, continuance, and learning outcome—A review of literature. *International Journal of Information Management*, 43, 1–14
- Prasad, R.K. (2015), "Hybrid, mixed-mode, or blended learning: better results with elearning", *Learning Solutions Magazine*, available at: [www.moodlerooms.com](http://www.moodlerooms.com) (accessed April 10, 2016)
- Regueras, L.M., Verdu, E., Verdu, M.J. and de Castro, J.P. (2011), "Design of a competitive and collaborative learning strategy in a communication networks course", *IEEE Transactions on Education*, Vol. 54 No. 2, pp. 302-307.
- Roby, T., Ashe, S., Singh, N. and Clark, C. (2013), "Shaping the online experience: how administrators can influence



student and instructor perceptions through policy and practice”, *The Internet and Higher Education*, Vol. 17, pp. 29-37, available at: <http://faculty.washington.edu/rvanderp/DLData/RobyAshe2012.pdf> (accessed April 10, 2016)

Romero, C., Ventura, S. and García, E. (2008), “Data mining in course management systems: Moodle case study and tutorial”, *Computers&Education*, Vol.51No.1, pp.368384, available at: [http://research.moodle.net/95/1/Romero%20\(2008\)%20Data%20mining%20in%20course%20management%20systems%20Moodle%20case%20study%20and%20tutorial.pdf](http://research.moodle.net/95/1/Romero%20(2008)%20Data%20mining%20in%20course%20management%20systems%20Moodle%20case%20study%20and%20tutorial.pdf) (accessed April 12, 2016).

Umayyah, U. (2018). Social Support As A Mediator Between Social Identity And College Student’s Stress, *Psychological Research and Intervention*, 1(1), 32-42 V. Gherheş, S. Şimon, and I. Para, “Analysing students” reasons for keeping their webcams on or off during online classes,” *Sustain.*, vol. 13, no. 6, 2021, doi:10.3390/su13063203

Toquero, C. M. (2020). Challenges and opportunities for higher education amid the COVID-19 pandemic: The Philippine context. *Pedagogical Research*, 5(4).

Wang, X, Cai, L, Qian, J. & Peng, J. (2014). Social support moderates stress effects on depression, *International Journal of Mental Health Systems*, 8(41), 2-5.

Wen, M. and Rosé, C.P. (2014), “Identifying latent study habits by mining learner behavior patterns in massive open online courses”, *Proceedings of the 23<sup>rd</sup> ACM International Conference on Conference on Information and Knowledge Management*, ACM, pp. 1983-1986.

Wittink, D. R., & Bayer, L. R. (1994). The measurement imperative. *Marketing Research*, 6(4), 14

You, J.W. Identifying significant indicators using LMS data to predict course achievement in online learning. *Internet High. Educ.* 2016, 29, 23–30. [CrossRef]

Yusuf, M.A. 2015. *Asesmen dan Evaluasi Pendidikan*. Jakarta: Prenadamedia Group.

Zhang, L., Han, Z., & Gao, Q. (2008). Empirical study on the student satisfaction index in higher education. *International Journal of Business and Management*, 3(9), 46–51