

## LEARNING MOTIVATION DIMENSIONS AMONG STUDENTS UNDER THE NEW LEARNING SYSTEM: AN EXPLORATORY SEQUENTIAL DESIGN

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### ABSTRACT

This study examined the learning motivation dimensions under the new learning system using exploratory mixed method design. The exploratory sequential mixed method design is characterized by an initial qualitative phase of data collection and analysis, followed by a phase of quantitative phase of data collection analysis, with a final phase of integration or linking of data from two separate strands of data. More specifically, it aimed to construct, develop and evaluate the learning motivation dimensions under the new learning system scale. In the qualitative phase, there were seven students who participated in the in-depth interview and ten students participated in the focus group discussion. There were three themes that emerged from the interview that put emphasis on flexible learning, exploratory learning, and learning independence. A 30-item new approaches of teaching scale was also constructed based from the results of the interview, which was subjected to the quantitative phase. In the quantitative phase, 200 questionnaire responses were analyze for exploratory factor analysis (EFA). Results showed three underlying learning motivation dimensions under the new learning system A total of three themes on the learning motivation dimensions under the new learning system questionnaire was developed which are flexible learning with a total of ten items, exploratory learning with a total of five items, learning independence with a total of seven items, and active learning with a total of four items and the overall the scale has a total of 26-item questionnaire. This study recommended that one way to enhance students' learning motivation in the new normal is to provide them with opportunities to actively participate in the learning process through interactive and engaging activities. Additionally, incorporating student choice and personalization in the learning experience can also help increase their motivation and investment in their own learning.

**Keywords:** *Learning Motivation, New Learning System, Exploratory Sequential Design, Factor Analysis, Municipality of President Roxas, Philippines*

### INTRODUCTION

The Covid-19 pandemic, or coronavirus pandemic has caused a major transformation in the educational system. The previous face-to-face classes has now shifted into online learning. However, in a recent data, it was revealed that out of 22,519

students, 76% were identified to have lack of motivation for online learning (Daugherty, 2021). It was revealed that the reason for this are students claimed to experience lack of interaction with other students, inability to effectively learn in an online format, and distracting home environments or lack of access to suitable study spaces. Additionally, this distance learning was reported to cause students some health problems like fatigue, headache, or fever because they had too many assignments to do in short time (Simamora, 2020). As a result, online learning has caused lack motivation for some students which can greatly affect to the academic achievement of the students (Cahyani, Listiana & Larasati, 2020).

Meanwhile, a report conducted by Dangle and Sumaoang (2020) highlighted that modular learning can pose certain challenges for students, such as the need for increased self-discipline and self-motivation, longer preparation time, and a lack of tangible rewards for teachers and staff. Additionally, it requires more administrative resources to track students and manage multiple modules. As a result, it becomes crucial to provide students with appropriate learning support and materials in order to sustain and cultivate their interest and motivation in learning. Specifically, the utilization of modules promotes the development of effective self-study and learning skills among students (Dangle & Sumaoang, 2020). By engaging in independent progress and minimizing external assistance, learners assume a greater sense of responsibility in accomplishing module-based tasks, ultimately empowering themselves (Nardo, 2018).

Despite of the growing number of research about learning motivation, little has been conducted to relate it into a modular learning platform. With the growing concerns of educators on how to motivate students to sustain their interest in learning through modular learning system, makes this research a need and relevant. Moreover, this study will used an exploratory research design in which this study will focus on looking at the context of the problems using both qualitative and quantitative aspect of the problems. Making this study more substantial and relevant.

By identifying the factors that can influence students' learning motivation, the teachers, the parents and other stakeholders can be able to provide additional support in order to increase students' interest towards learning. The themes that can be generated from this exploratory study, can also be an essential basis to further improve modular learning practices in a way that it can effectively boosts students' motivation to learn.

## **FRAMEWORK**

One essential element to thrive in this new learning platform is the ability to motivate oneself to learn regardless of what the obstacles are. In particular, studying at home, is undeniably prone to interfere students' study habits. Students often exhibit a tendency to prioritize leisure activities like playing or watching TV instead of engaging in self-study, which may stem from a certain level of laziness. This inclination becomes evident when faced with challenging problems, as students often lack the motivation to independently tackle and resolve them. Consequently, the learning environment within their family might not sufficiently foster a strong commitment to studying. Additionally, inadequate support from both parents and teachers further contributes to this issue.

As a pragmatist point of view, this study believes that in this new learning modalities, it is expected that students are experiencing different moods towards learning. Either they feel more excited or feel anxious on the new way of teaching and learning. The success of this new method of instruction (i.e. modular learning instruction) relies on how students are motivated to adapt in this new kind of learning resources.

With that, this study is grounded on self-determination theory by Deci & Ryan (1995). This theory presents a comprehensive framework for motivation, focusing on the belief that every individual possesses fundamental psychological needs for autonomy, relatedness, and competency. Additionally, it emphasizes the significant role played by social environments in fulfilling these needs (Deci & Ryan, 2002; Deci, Vallerand, Pelletier, & Ryan, 1991). According to the self-determination theory, motivation can be classified into various types, ranging along a continuum of self-determination. At one end of the spectrum, there is amotivation, which signifies a complete absence of motivation. Individuals who are amotivated either refrain from taking action or exhibit passive behaviors. At the opposite end lies intrinsic motivation, which represents the highest level of self-determined behavior. Intrinsically motivated individuals engage in activities for the inherent satisfaction they provide, rather than being driven by external factors. In the middle range, we find extrinsic motivation, which can be further divided into three subcategories: External regulation, Introjection, Identification. External regulation is caused wholly by externally imposed rewards or punishment. Introjection occurs when individuals impose their own internal rewards or constraints (e.g. guilt, shame or obligation).

## **METHODS**

### **Research Design**

This study employed an exploratory research design, which involves investigating research questions that have not been extensively studied before. Exploratory research can be qualitative, but it can also be quantitative if conducted with a large sample. It is sometimes referred to as interpretive research or a grounded theory approach due to its flexible and open-ended nature. Exploratory research is used to gain a better understanding of a problem that lacks a clear definition. In this study, the researcher began with a general idea and used it to identify issues, forming the basis for the research. Specifically, individual interviews were conducted with selected participants to gather data and provide a comprehensive description of students' learning motivation in the new learning system

Meanwhile, according to Creswell & Plano Clark (2018), exploratory sequential mixed methods represent an approach for combining qualitative and quantitative data collection and analysis in a series of phases. The authors emphasized that the initial phase of this study involves the collection and analysis of qualitative data, which then informs the subsequent quantitative phase. The latter phase may include the administration of a survey or another method of gathering quantitative data. Thus, the qualitative analysis played a vital role in formulating specific research questions for the quantitative phase, which employed a questionnaire, survey, or similar approach to collect quantitative data. The collected data underwent rigorous statistical analysis to

validate the instrument or the conceptual framework being developed (Creswell & Plano Clark, 2018).

### **Research Participants**

In this study, stratified random sampling was used to identify the respondents and participants in the study. That was proportion allocation was used to proportionally get the sample from each of the district in Municipality of President Roxas.

In the qualitative phase, we conducted extensive interviews with ten students from the Municipality of President Roxas, along with a focus group discussion involving seven public students. The insights gathered from these interviews were utilized to identify emerging themes and develop a questionnaire. In the quantitative measurement, a total of 200 public students answered the generated quantitative survey for exploratory factor analysis and confirmatory analysis. After the conduct of 200 questionnaires, another 30 participants were requested for reliability test.

Meanwhile, these 17 participants for the qualitative and these 200 respondents for the quantitative were selected based on their position. That was, only students aging from 18 years old and above were included in this study. On the other hand, students that were not in the inclusion criteria were excluded in the study.

### **Research Instrument**

This research formulated an interview guide questions based on the objectives of the study. These interview guide questions were asked to the participants in the interview and during the focus group discussions. This interview provided views about the students' learning motivation in the new learning system.

Meanwhile, professionals were asked to assess the content validity of the interview questions and evaluate the durability of the items that represented the fundamental aspects of students' motivation to learn in the new educational system. The objective was to guarantee that the questionnaire is easy to understand and comprehend.

### **Statistical Treatment**

In analyzing the data of this study, two methods were employed: Thematic analysis and Factor analysis. Below were the detailed explanations of how these methods were done.

In the qualitative aspect, the data obtained from in-depth interview were analyzed using thematic analysis. Based on Kiger and Varpio (2020), thematic analysis was a method for analyzing qualitative data that entails searching across a data set to identify, analyze, and report repeated patterns. It is a method for describing data, but it also involves interpretation in the processes of selecting codes and constructing themes. Moreover, thematic analysis involves a six-step process: familiarizing yourself with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes, and producing the report (Kiger & Varpio, 2020).

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The study employed Factor analysis to simplify a set of complex variables or items and explore the underlying dimensions that explain the relationships between the variables. According to Tavakol and Wetzel (2020), this statistical method simplifies a matrix of correlations, allowing researchers to better understand the relationship between items in a scale and the underlying factors that the items may have in common. The main purpose of using Factor analysis in this study was to develop and refine assessment instruments for evaluating effective online teaching, which was validated through the construct validity of the measure (Tavakol & Wetzel, 2020).

Before conducting Factor Analysis, the data underwent the Kaiser-Meyer-Okin (KMO) measure of sampling adequacy. This test was used to determine if the data was appropriate for Factor Analysis. Each variable in the model was assessed, as well as the complete model, to determine the sampling adequacy. The KMO statistic indicated the amount of shared variance among variables. If the proportion was low, it indicated that the data was well-suited for Factor Analysis. (Reddy & Kulshrestha, 2019).

After passing the KMO test, the next step was to extract unrotated factors from the data using principal axis factoring in Exploratory Factor Analysis (EFA). To ensure that only variables with a communality value of .40 or higher were included, the first half of the data was used. The factors were then rotated using Promax rotation to simplify the factor structure. The Kaiser rule was used to determine the number of dimensions or factors, with only factors whose eigenvalues were greater than or equal to 1 retained. Additionally, Cattell's scree plot criterion was utilized to graph the eigenvalue of each dimension or factor.

The number of dimensions or factors extracted and retained were further validated by the scree plot. The factor loadings were determined by eigenvalues and represented the correlation coefficients between the items or variables in rows and the factors or dimensions in columns, which were identified as the Factor Rotation Matrix (Carpenter, 2006). This step addressed the latent dimensions in the teachers' disciplining strategy in an online learning: scale, and the factors obtained were labeled based on the shared theme of the item cluster.

## **RESULTS AND DISCUSSION**

### **Emerging Themes of Learning motivation dimensions under the new learning system**

There are three themes that emerge from in-depth interview and focus group discussion with selected public students in the Municipality of President Roxas that put emphasis on flexible learning, exploratory learning, and learning independence.

**Flexible learning.** Many of the participants stated that flexible time can promote engagement and motivation by allowing students to choose when and how they engage

with the material, which can enhance their sense of control and ownership of the learning process. Also, flexible time is an important feature of flexible learning that can enhance motivation by promoting autonomy, reducing stress, and promoting engagement and ownership of the learning process. These are evident in the following quotes from the participants:

*"The new learning system offers me a more freedom in my time management."  
(IDI, P2)*

*"Using this new system in learning, I can learn the subjects at my own learning  
pace." (IDI, P7)*

*"Arranging my study time is my favorite part in learning under the new learning  
system." (IDI, P8)*

Meanwhile, most participants claimed that when they feel comfortable in their learning environment, they are more likely to be motivated to learn and participate actively in the learning process. This comfort can come from various aspects, such as being able to choose the location, time, and pace of their learning, having access to supportive resources and materials, and having a sense of control over their learning journey. These ideas are present in the narratives of the participants stated below:

*"This current modality of learning has given opportunity to choose how to  
structure my learning." (IDI, P3)*

*"The modalities offered by the school makes me more comfortable in learning."  
(IDI, P9)*

*"I am able to study the subject anytime and anywhere with this current learning  
system." (FGD, P7)*

The result on the importance of flexible learning is supported by many authors. Flexible learning has become increasingly important, especially during the COVID-19 pandemic, where many students have had to adapt to online and remote learning environments. Several studies have shown that flexible learning can positively impact students' learning motivation, engagement, and academic performance. For example, a study by Cho and Heron (2021) found that students who were given more control over their learning environment, such as the ability to choose the time and pace of their learning, were more motivated to learn and had better academic outcomes.

Similarly, a study by Simonsen and McElreath (2021) showed that flexible learning environments, which allowed students to choose their learning activities, increased their engagement and motivation. Therefore, providing flexible learning opportunities can be a key factor in promoting student motivation and engagement, leading to better academic performance.

**Exploratory learning.** Many of the participants stated that when they are given the freedom to pursue their interests and take ownership of their learning, they become

more engaged and motivated. Independence in learning allows students to identify their strengths and weaknesses, set their own goals, and develop their own strategies for success. It also encourages them to seek out new challenges and take risks, which can lead to deeper learning and personal growth. These are evident in the following quotes from the participants:

*“This new learning modality allows me to explore my ability, to think creatively and develop thoughts.” (FGD, P1)*

*“Through the activities given, I become more manipulative to the concepts.” (IDI, P10)*

*“I am expose to learning experiences that allows me to have the ability to select, organize, and order relevant information.” (IDI, P9)*

Meanwhile, most participants claimed that through exploratory learning, it allows students to experiment and discover new concepts and ideas on their own, fostering curiosity and creativity. As such, students are more likely to stay engaged and motivated throughout their academic journey, leading to a deeper understanding of the material and improved long-term retention. These ideas are present in the narratives of the participants stated below:

*“Through the learning opportunities provided I am able to apply my knowledge.” (FGD, P7)*

*“Using this current system I am provided with the chance to explore ideas that are interesting and important.” (FGD, P3)*

*“Expressing my personal ideas and knowledge is what I like about my learning today.” (FGD, P5)*

*“I am given opportunity to discover my inner abilities.” (IDI, P8)*

The result on the importance of exploratory learning is supported by many authors. A study by Pekrun et al. (2018) found that students who had the opportunity to explore and experiment with concepts on their own had higher levels of intrinsic motivation and were more likely to persist in challenging tasks. Similarly, a study by Renninger and Hidi (2021) found that exploratory learning activities that allowed students to follow their interests and passions led to increased motivation and a deeper understanding of the material.

Another study by Brouwer et al. (2019) found that students who were given the opportunity to explore real-world problems and apply their learning to practical situations were more motivated and engaged in the classroom. These findings highlight the importance of providing students with opportunities for exploratory learning in order to enhance their motivation and ultimately improve their academic performance.

**Learning independence.** Many of the participants stated that when they able to learn independently, they are more likely to be motivated and engaged in their studies. This is because independent learning allows students to explore their interests and passions, set their own goals, and take ownership of their learning process. Additionally, independent learning helps students develop critical thinking, problem-solving, and time-management skills, which are all essential for success in both academic and professional settings. These are evident in the following quotes from the participants:

*“This learning today help me independently enjoy studying for information on my own.” (IDI, P2).*

*“I love to exert efforts in getting things done alone.” (IDI, P3)*

*“I am more motivated to meet my deadlines when working alone.” (IDI, P7)*

*“Working on my own is my favorite party of learning.” (IDI, P10)*

Meanwhile, most participants claimed that when students take ownership of their learning, they become more invested in the process and are more likely to engage with the material in a meaningful way. This ownership empowers students to set their own goals and to take the initiative to seek out resources and support that can aid in their learning. By being responsible for their own learning, students also develop important skills such as self-regulation, time-management, and critical thinking, which are valuable not only in the classroom but in all areas of life. These ideas are present in the narratives of the participants stated below:

*“When I work alone, I am more open to new ways of doing familiar things.” (FGD, P7)*

*“I love to take responsibility for my own learning.” (IDI, P5)*

*“I am able to plan effectively my study when I don’t have other people to consider.” (IDI, P6)*

The result on the importance of learning independence is supported by many authors. Based on a recent study by Kim et al. (2021), students who engage in self-directed learning activities are more likely to feel motivated and invested in their educational pursuits. Another study by Zhu et al. (2021) found that independent learning enhances student engagement and promotes the development of important skills such as self-efficacy, self-regulation, and metacognition.

Similarly, a study by Veldkamp et al. (2021) found that students who take responsibility for their own learning are more likely to have a growth mindset, which further supports their motivation and learning outcomes. These findings suggest that independent learning can play a critical role in enhancing student motivation and promoting academic success.



## Dimensions of Learning motivation dimensions under the new learning system Scale

**Testing a 30-item Learning motivation dimensions under the new learning system scale.** In order to assess the suitability of the construct for factor analysis, two statistical tests were conducted: the Kaiser Meyer-Olkin Measure (KMO) of Sampling Adequacy and Bartlett's test of sphericity. Analysis from Table 1 reveals that the KMO value is .763, exceeding the recommended threshold of .5. This indicates that the sample used in the analysis is of high quality and appropriate for factor analysis. Kaiser (1974) suggests accepting values above .5 as satisfactory. Additionally, values ranging from .5 to .7 are considered average, values between .7 and .8 are considered good, and values between .8 and .9 are considered excellent (Kaiser, 1974).

**Table 1**  
**KMO and Bartlett's Test**

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.869
Bartlett's Test of Sphericity	Approx. Chi-Square	5953.80
	Df	0
	Sig.	.000

Based on the initial analysis, it can be concluded that the 30-item Learning motivation dimensions in the new learning system are appropriate for factor extraction, indicating their readiness for factor analysis.

**Derivation of the Number of Factor Structure.** The identification of the factor structure was established based on qualitative data analysis, specifically focusing on the outcomes of a priori analysis. This analysis revealed three distinct dimensions of learning motivation within the new learning system. Consequently, the three-factor model displays clear patterns, which are presented in Table 2.

The factor loading below .4 are reduce from the model and based on the results only 26 items where accepted and passed the criteria then subjected for rotation and analysis.

After which, the 26 – item construct is then subjected for rotation. The promax rotation was used since the factors seem to be correlated with a coefficient above .50 which reflects that the data is not assumed as orthogonal.

The pattern matrix presented in Table 2 demonstrates the utilization of Principal Axis factoring along with a Promax rotation method, specifically Promax with Kaiser Normalization. The results indicate that the items in the four factors have loadings exceeding .4, as recommended by Field (2005) for achieving the desired factors. Furthermore, there are no instances of item cross-loading or failure to load, signifying that the items accurately represent their respective factors. It is important to highlight that higher loadings indicate a stronger association between the variable and the factor, thus making the variable a better representative of the factor (Hair et al., 1998).

**Table 2**  
**Pattern Matrix Four Factor Model**

		Factor			
		1	2	3	4
1	I have freedom with my time management	.44			
		4			
2	I can learn the subjects at my own learning pace				
3	I study the subject anytime and anywhere	.50			
		7			
4	I can arrange anytime my time	.76			
		6			
5	I have teachers that can be contact any time	.47			
		5			
6	I can contact easily my teachers using different ways	.59			
		3			
7	I can learn the materials in school using campus study, online study, and self-study				
8	I am compatible with the modalities offered by the school				
9	I have enough time submitting my requirements				.510
10	I am given opportunity to choose how to structured my learning				.798
11	I have the ability to think creatively and develop thoughts				.884
12	I am able to manipulate concepts through activities		.41		
			7		
13	I have the ability to select, organize, and order relevant information			.409	
14	I have the chance to explore ideas that are interesting and important.		.83		
			2		
15	I am able to express my personal ideas and knowledge		.65		
			9		
16	I have the chance to discover my inner abilities	.44			
		4			
17	I am able to improve my own performance through feedback from instructor and peers		.82		
			0		
18	I am given chance to actively explore and apply my knowledge		.68		
			4		
19	I am able to interpersonally accomplish task				.437
20	I find it interesting to learn when I am left alone to do a task	.43			
		5			

2	I enjoy finding information about new topics		.858
1	on my own		
2	I exert efforts just to get things done		.633
2			
2	I am good at meeting deadlines		.498
3			
2	I am happy working on my own		.603
4			
2	I try to stick with them, even when tasks are	.67	
5	difficult	0	
2	I am open to new ways of doing familiar	.71	
6	things	3	
2	I enjoy being set a challenge		
7			
2	I plan my time for study effectively		.667
8			
2	I tend to be motivated to work by assessment		.561
9	deadlines		
3	I take responsibility for my learning	.41	
0	experiences	8	

The factor-item correlations in the EFA results suggest a significant relationship between factors and variables, indicating that these items can be regarded as components of their respective factors. Utilizing EFA, a four-factor model for learning motivation dimensions was constructed under the new learning system. This model consists of 26 items, namely flexible learning, exploratory learning, learning independence, and active learning, as presented in Table 4.

**Final Version of Learning motivation dimensions under the new learning system.** The final version of the instrument, which is the result of this study, can be found in Table 3. After analyzing the 30 items, certain concerns regarding face validity were identified based on the factor loadings. Items with a coefficient lower than .40 were excluded, in line with the findings of Hair et al. (2010), which suggest that items lacking meaning and not reflective of the factor should be removed from the model. Researchers have the flexibility to determine the loading coefficient in order to select the items that best represent the factor, excluding those with low coefficients from the factor structure.

The new learning system questionnaire incorporated EFA to create dimensions for learning motivation. This questionnaire comprises 26 items divided into four themes, derived from qualitative findings. These themes include flexible learning (10 items), exploratory learning (5 items), learning independence (7 items), and active learning (4 items). The Likert-scale used ranges from 5 (strongly agree) to 1 (strongly disagree).

**Table 3**

**Learning motivation dimensions under the new learning system  
Questionnaire**

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**ITEMS**

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**Flexible learning**

- 1 I have freedom with my time management
- 2 I study the subject anytime and anywhere
- 3 I can arrange anytime my time
- 4 I have teachers that can be contact any time
- 5 I can contact easily my teachers using different ways
- 6 I have the chance to discover my inner abilities
- 7 I find it interesting to learn when I am left alone to do a task
- 8 I try to stick with them, even when tasks are difficult
- 9 I am open to new ways of doing familiar things
- 10 I take responsibility for my learning experiences

**Exploratory learning**

- 11 I am able to manipulate concepts through activities
- 12 I have the chance to explore ideas that are interesting and important.
- 13 I am able to express my personal ideas and knowledge
- 14 I am able to improve my own performance through feedback from instructor and peers
- 15 I am given chance to actively explore and apply my knowledge

**Learning independence**

- 16 I have the ability to select, organize, and order relevant information
- 17 I enjoy finding information about new topics on my own
- 18 I exert efforts just to get things done
- 19 I am good at meeting deadlines
- 20 I am happy working on my own
- 21 I plan my time for study effectively
- 22 I tend to be motivated to work by assessment deadlines

**Active Learning**

- 23 I have enough time submitting my requirements
- 24 I am given opportunity to choose how to structured my learning
- 25 I have the ability to think creatively and develop thoughts
- 26 I am able to interpersonally accomplish task

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**Legend:**

- 5 – Strongly Agree
- 4 – Agree
- 3 – Moderately Agree
- 2 – Disagree
- 1 – Strongly Disagree

## CONCLUSIONS

In the light of the study, the following conclusions were drawn:

1. The emerging themes highlight the learning motivation dimensions under the new learning system which put emphasis on flexible learning, exploratory learning, and learning independence.
2. The result derived from factor analysis indicates that the learning motivation dimensions under the new learning system of teaching has four factors that includes flexible learning, exploratory learning, learning independence, and active learning.
3. The learning motivation dimensions under the new learning system with 26 items was develop to measure the learning motivation dimensions under the new learning system.

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