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Relationship between junior high students' perceptions of self-learning modules and their academic performance

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Abstract

This study investigated junior high school students' perceptions of self-learning module utilization in San Miguel, Bulacan, Philippines during the 2020-2021 school year and examined the relationship of these perceptions and their academic performance. The researcher surveyed 100 Grade 7-10 students, based on stratified purposing sampling, using a validated instrument and analyzed the results using SPSS. Key findings indicate that students generally viewed self-learning modules favorably, with feedback and communication systems rated highest, while self-directed learning and time management were identified as areas needing improvement. Perceptions of self-learning module utilization had a positive significant relationship with academic performance. Specifically, parental and community support (r = .33, p < .01), technological affordances and learning resources (r = .33, p < .01), and self-directed learning and time management (r = .31, p < .01) were significantly related to performance. Simple linear regression analysis revealed that students' perceptions of self-learning modules predict their academic performance (β = 2.86, p < .05), though perceptions accounted for only 7% of the variance. Recommendations include developing teacher training on effective module implementation, providing parent orientation on supporting at-home learning, and creating a systematic program for module implementation involving all stakeholders. Future research should explore additional variables influencing academic performance in this context.

Keywords: Academic performance self-directed learning, self-learning module

Introduction

Academic performance is used to assess student progress in a variety of academic subjects, and teachers and school officials evaluate students' performance based on classroom achievements, graduation rates, and test scores on standardized assessments (Levin, 2012). According to Shoukat Ali et al. (2013), it can be influenced by a variety of factors such as gender, age, teachers, learning environment, social economic level of parents or guardians, tuition trends, learning styles, and even the medium of instruction in schools. Aside from these factors, other issues, such as natural disasters and national health crises, may have an impact on these personal and school-related factors influencing academic performance.

In early 2020, the Philippines was hit by a nationwide COVID-19 outbreak. The pandemic had caused significant disruption in the country's educational system, challenging its overall flexibility and preparedness. The Department of Education (DepEd), the executive branch of the Philippine government in charge of ensuring access to, promoting equity in, and improving the quality of basic education, had institutionalized their education frameworks and innovations for the new normal in education. Like other Southeast Asian countries, the country adopted modular systems to deliver education while prioritizing the safety of the learners. One of the main features of DepEd's plan was the adoption of multiple learning delivery modalities, with blended learning and distance learning as major options. DepEd Secretary also reiterated that these modalities would be offered appropriately depending on the situation of the learners' households (Republic of the Philippines Department of Education, 2020).

However, this alteration in the implementation of teaching and learning delivery modes in schools led for parents to voice out their concerns. In a report published by UNICEF and UNDP, parents living in the National Capital Region (NCR) expressed a range of concerns concerning distance learning, including money for the loading of phones, lack of a gadget (or enough up-to-date equipment to be used by each child), bad internet connection, difficulty understanding on-line lessons, parents' lack of time to spend on schoolwork with children, and children's inability to concentrate during online work (UNICEF Philippines, 2020). These concerns could also be a reflection of parents living in other regions. While these issues and problems persisted during the opening of classes in schools, DepEd assured the parents that a wide range of flexibility would be implemented to cater for the needs of students with particular requirements or circumstances.

As a result of this situation, many schools have been forced to implement other alternative modes of learning, such as the use of self-learning modules. These self-learning modules were designed in such a way that the learner has complete control over what they learn, how they learn it, when they learn it, and where they learn it (Sequeira, 2012). As explained by Padmapriya (2015), self-learning module refers to a self-contained and independent unit of instruction with the primary focus on a few well-defined objectives dealing with a single conceptual unit of subject matter. The Department of Education also defined self-learning modules as "self-contained, self-instructional, self-paced, and interactive public school learning resources designed to teach a specific topic or lesson in which the learner actively interacts with the instructional material rather than passively reading the material". When teachers were unable to provide constant instructional supervision and guidance in a classroom setting, these modules became an ideal learning resource and thus a priority in distance learning.

Many researchers had taken opposing positions on this desperate measure of using printed self-learning modules as an alternative mode of learning delivery. Some researchers claimed that using modules could improve cognitive abilities and scientific communication (Rofiana Rachmad et al., 2017; Simamora, Ertikanto, & Wahyudi, 2017). Others discovered that using modules could also improve cognitive and affective learning outcomes, as well as concept mastery (Nurhayati & Boisandi, 2015). On the other hand, this mode of delivery had some disadvantages which included greater self-discipline and self-motivation required for students, increased preparation time and lack of concrete rewards for teachers and staff, and greater administrative resources needed to track students and operate multiple modules (Dangle & Sumaoang, 2020).

As emphasized by Neroni et al. (2019), it was important to look into the influences of self-learning modules on students' academic performance and learning strategies. Some researchers who had conducted a study on the relationship between self-regulated learning behaviors and academic performance discovered that self-regulated learning had an effect on the academic performance of students (Kitsantas et al., 2008). A similar study was conducted on the effect of motivational and self-regulated learning components on classroom academic performance. Self-efficacy and intrinsic value were found to be positively associated with cognitive engagement and performance (Pintrich & de Groot, 1990).

Furthermore, perceptions of self-learning modules are influenced by various factors. These factors should be considered to determine the different aspects that will describe their perceptions in the utilization of self-learning modules. For instance, the content and instructional design of modules play an important role in their effectiveness, with well-structured and engaging materials leading to better learning outcomes (Delen et al., 2014). Feedback and communication systems are essential for maintaining student engagement and providing necessary support, particularly in distance learning contexts (Hatzipanagos & Warburton, 2009). Parental and community support have been shown to significantly impact students' motivation and success in self-directed learning environments (Boonk et al., 2018). The technological affordances and learning resources available to students can either facilitate or hinder their learning experience, depending on accessibility and ease of use (Bower, 2008). Finally, self-directed learning and time management skills are critical for students to effectively navigate and benefit from self-learning modules, with research indicating that these skills are strong predictors of academic success in distance and online learning settings (Broadbent & Poon, 2015). Understanding these aspects is crucial for comprehensively evaluating the impact of self-learning modules on students' academic performance.

Self-learning modules were used to continue academic activities in the face of the pandemic's health and societal problems. However, this abrupt change in the delivery of teaching and learning activities in schools posed a significant threat to the quality of learning that students would acquire. That is why understanding the underlying implications of self-learning modules on students' academic performance was critical.

Self-learning modules were used to continue academic activities in the face of the pandemic's health and societal problems. However, this abrupt change in the delivery of teaching and learning activities in schools posed a significant threat to the quality of learning that students would acquire. While previous studies have examined the effects of self-regulated learning on academic performance, there is a notable gap in the literature regarding the specific impact of self-learning modules implemented during the COVID-19 pandemic on students' academic performance in the Philippine context. This study aims to address this gap by investigating the underlying implications of self-learning modules on students' academic performance in the Philippines during the pandemic. Understanding these implications is critical for evaluating the effectiveness of this emergency educational measure and informing future policy decisions in similar situations.

Conceptual framework

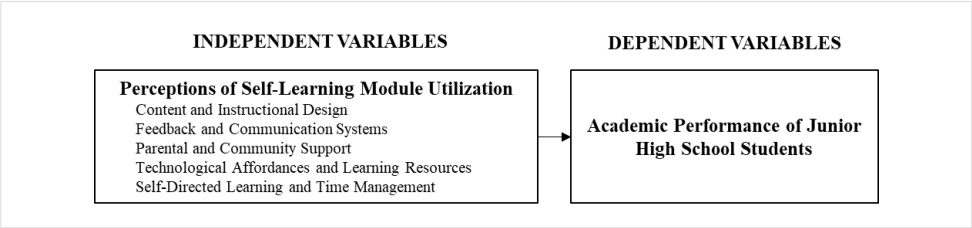
This research was founded on the Self-directed Learning Theory and the Independent Study Theory (Candy, 1991; Garrison, 1997; Keegan, 1986; Keegan, 1996; Knowles, 1975; Saba, 2003; Snarski, 2008; Wedemeyer, 1981). D.R. Garrison developed Self-directed Learning Theory in 1997 based on Malcolm Knowles' Theory of Andragogy (Garrison, 1997). In the context of this study, this theory is particularly relevant as students using self-learning modules are required to take initiative in understanding their learning needs, much like adult learners. According to this theory, the learner establishes learning objectives, locates the resources required, develops and implements a learning plan, and then assesses their own performance. In the current pandemic situation, learners using self-learning modules must seek out assistance from teachers, mentors, or peers remotely, and take control over their own learning journey. While self-directed learning is well suited for self-motivated learners and those who respond well to technology-based learning, it could be challenging for some learners, particularly those with less socio-economic opportunities and educational resources, low literacy skills, or low self-confidence (Regan, 2003): factors that are especially pertinent in the Philippine context during the COVID-19 crisis.

Furthermore, Charles Wedemeyer's (1981) Theory of Independent Study was also founded on the ideal of learner freedom. He defined independent study as one in which students and teachers are separated and normal teaching and learning processes are carried out in writing or through some other medium. This learning theory is implemented through student activities that are designed to be convenient for the students in their own environment. In the context of self-learning modules used during the pandemic, this theory is highly applicable as learners are indeed separated from their teachers and are responsible for their own progress, with the ability to start and stop at any time (Simonson et al., 2011).

The theories of self-directed learning and independent study shed light on the significance of appropriate distance education programs and components that would enable students to learn meaningfully. As a result, the implementation of self-learning modules in high schools during the COVID-19 pandemic should be monitored and examined from the students' point of view in order to identify the underlying implications for their learning and academic performance. This study aims to explore these implications within the unique context of the Philippine education system during this unprecedented time. To represent the independent and dependent variables, the conceptual framework used in this study is depicted in Figure 1 below.

Figure 1

The Conceptual Framework of the Relationship Between the Independent and Dependent Variables



Research objectives

The general objective of this research was to investigate how junior high school students perceive self-learning module utilization and how these perceptions interact with their academic performance. Specifically, it aimed to: (1) determine the respondents' perceptions of self-learning module utilization in terms of content and instructional design, feedback and communication systems, parental and community support, technological affordances and learning resources, and self-directed learning and time management; (2) describe the academic performance of the respondents in terms of their grade weighted average; (3) examine the relationship between respondents' perceptions of self-learning module utilization and academic performance; and (4) ascertain if the respondents' perceptions of self-learning module utilization predicts the academic performance

Methodology

Research design

This quantitative study employed the correlational research design to provide a comprehensive understanding of the relationship between self-learning module utilization and academic performance. As discussed by Seeram (2019), correlational research is a type of non-experimental research that facilitates prediction and explanation among variables. It is a statistical technique used to examine the relationship between respondents' perceptions of self-learning module utilization and academic performance. Then, it determined if their perceptions predict

their academic performance. Furthermore, descriptive research design was also used in this study. According to Sousa et al. (2007), descriptive research design describes what actually exists, quantifies its frequency of occurrence, and categorizes the data. The researcher used this method to assess respondents' perceptions of self-learning module utilization in terms of content and instructional design, feedback and communication systems, parental and community support, technological affordances and learning resources, self-directed learning, and time management. Additionally, academic performance was evaluated using the respondents' grade weighted average (GWA).

Respondents of the study

This study surveyed one hundred junior high school students currently enrolled at different high schools in San Miguel, Bulacan in the school year 2020-2021. The respondents were chosen using a purposive sampling technique. According to Etikan et al. (2016), purposive sampling, also known as judgment sampling, is the purposeful selection of a participant based on the individual's characteristics. Specifically, the study employed a stratified random sampling technique to select participants from Junior High School (JHS) students in Grades 7-10 across different schools in San Miguel, Bulacan. The stratified sampling approach was chosen to ensure representation from each grade level and school, thus providing a more accurate reflection of the overall JHS population in the area.

A nonrandom approach requires neither underlying theories nor a predetermined quantity of participants. Due to the difficulties caused by the pandemic, the researcher purposefully selected respondents for this study using the following criteria: (1) students enrolled in junior high school; (2) students enrolled in San Miguel, Bulacan in the school year 2020-2021; and (3) students who used printed self-learning modules as their alternative delivery system of education.

Based on the criteria mentioned above, only 3 schools in San Miguel, Bulacan used printed modules, so these schools were included in the study. The total population of JHS students (Grades 7-10) in these three schools is approximately 3000. To determine the appropriate sample size, we used the formula for stratified sampling: $n = (z^2 * p * q * N) / (e^2 * (N-1) + z^2 * p * q)$, where n is the sample size, N is the population size (3,000), z is the z-score (1.96 for 95% confidence level), e is the margin of error (0.10 or 10%), q is the proportion of the population that does not have the characteristic of interest, and p is the population proportion (assumed to be 0.5 for maximum variability). This calculation yielded a sample size of approximately 93, which was rounded up to 100 respondents to account for potential non-responses and to simplify the stratification process.

The sample was then stratified by grade level and school, with approximately 33 students selected from each school and 25 students from each grade level. This stratification ensures equal representation from each grade level and school, providing a balanced sample that reflects the overall JHS population using printed modules in San Miguel, Bulacan. With this sampling methodology, the researcher achieved a 95% confidence level with a 10% margin of error, which is acceptable for this type of research design.

Instrumentation and data analysis

A self-created survey questionnaire was used by the researcher to assess respondents' perceptions of self-learning module utilization. This questionnaire underwent a rigorous pilot-testing process to ensure its reliability and validity. The pilot test was conducted with a sample of 30 Junior High School students from a school not included in the main study, but with similar demographics to the target population. These pilot participants were evenly distributed across grades 7-10 and included a balanced representation of genders.

The pilot questionnaire was administered online. To ensure that respondents understood the questions correctly, the researcher provided clear instructions at the beginning of the questionnaire and conducted a brief virtual orientation during the pilot-testing to address any queries. After completing the questionnaire, participants were asked to provide feedback on the clarity of questions, the appropriateness of response options, and the overall structure of the survey.

Based on the pilot test results and participant feedback, minor revisions were made to improve the clarity and relevance of certain items. The revised questionnaire was then validated by a panel of three experts in educational research and measurement. After incorporating their suggestions, the final version of the questionnaire was found to have an excellent overall internal consistency (Cronbach's Alpha (α) = .90).

For the main study, the questionnaire was administered in-person at each participating school, with researchers available to provide clarification if needed. Descriptive statistics such as frequency, mean, percentages, and standard deviation were used to analyze the collected data. Pearson's Product-Moment Correlation (r) and simple linear regression were used to test the study's hypotheses.

Findings and discussions

Perceptions of self-learning module utilization

This section summarizes the aspects included in the perceptions of self-learning module utilization. As shown in Table 1, results indicated the respondents' perceptions of self-learning module utilization across various parameters. The overall mean of 2.94 (*SD* = .44) suggests a generally positive perception of self-learning modules among the respondents, with responses falling close to the "Agree" category on the scale. This overall positive perception indicates that students generally find value in the self-learning modules, which is crucial for their effective implementation.

Among the parameters, feedback and communication systems received the highest rating ($\bar{x}$ = 3.17, *SD* = 0.61), suggesting that students particularly appreciate the mechanisms in place for receiving guidance and interacting with educators. This is followed closely by content and instructional design ($\bar{x}$ = 2.98, *SD*=.56), indicating that students find the modules well-structured and informative. These high ratings in key areas are encouraging, as they suggest that the modules are meeting critical needs in the distance learning context.

Table 1

Respondents' Perceptions of Self-Learning Module Utilization

Parameter	Mean	*SD*	Qualitative description
Content and instructional design	2.98	0.56	Agree
Feedback and communication systems	3.17	0.61	Agree
Parental and community support	2.86	0.56	Agree
Technological affordances and learning resources	2.90	0.44	Agree
Self-directed learning and time management	2.77	0.60	Agree
Overall mean	2.94	0.44	Agree

Note. Strongly Agree (3.26 - 4.00); Agree (2.51 - 3.25); Disagree (1.76 - 2.50); Strongly Disagree (1.00 - 1.75)

However, the lower ratings for self-directed learning and time management ($\bar{x}$ = 2.77, *SD* = .60) and parental and community support ($\bar{x}$ = 2.86, *SD* = .56) highlight areas that may need improvement. The relatively low score for self-directed learning and time management implies that students may be struggling with the autonomous nature of module-based learning, which could impact their academic performance. Similarly, the lower rating for parental and community support suggests that students may not be receiving adequate assistance outside of the formal educational setting, which could be particularly challenging in a distance learning environment.

These findings have important implications for the study and for educational practice. They suggest that while self-learning modules are generally well-received, there is a need for additional support in developing students' self-directed learning skills and in engaging parents and the community in the learning process. Future interventions could focus on enhancing these areas to improve the overall effectiveness of self-learning modules and, potentially, students' academic performance.

Content and instructional design

The pooled mean of the content and instructional design was 2.98, as shown in Table 1, indicating the respondents' agreement on the indicators listed under this parameter. Furthermore, the low standard deviation of 0.56 indicated that the data points tended to be very close to the mean, implying that the students' responses were very similar.

Furthermore, the highest mean of 3.08 (*SD* = .71) was obtained for the eighth indicator, which stated that the assessment tasks at the end of the self-learning modules were relevant and difficult to complete. It was followed by their agreement on the first indicator (*x* = 3.07, *SD* = .74), which referred to the statement of topics and objectives that should be met in the self-learning modules. In addition, the seventh indicator, which referred to the relationship between the content in self-learning modules and the assessment tasks, had a mean of 3.06 (*SD* = .81).

These findings imply that the majority of students noticed the inclusion of objectives, topic statements, and assessment tasks in the self-learning modules. It could be explained by the fact that our educational system places a strong emphasis on determining learning competencies and the various tasks and performances that must be completed to determine if they are met. These learning competencies included research skills, reading comprehension, writing, map reading, and hypothesis testing, all of which were necessary in a wide variety of professions and daily life (Republic of the Philippines Department of Education Regional Office III, 2020). As a

result, students are fixated on what objectives should be met in classroom instruction and what activities should be completed in order to achieve the lesson's outcomes.

The second and third indicators, on the other hand, had a lower mean when compared to the other indicators. These indicators concentrated on instructions for completing learning tasks (x = 2.94, SD = .72) and the presentation of self-learning modules (x = 2.93, SD = .70). This means that, while the majority of students agreed that the instructions for completing the learning tasks in the self-learning modules were simple to follow, there were some students who had difficulty understanding or following the instructions. It was also reflected in the students' interview responses that the most common problem they encountered was difficulty learning the lessons independently. According to one of the respondents, "lessons that I do not always understand well have been a source of frustration in my self-study."

Interestingly, the last indicator on the list had the lowest mean of 2.79 (SD = .80). This indicator denoted how much time students had to complete the various tasks in the self-learning modules. Despite the fact that the mean for this indicator reflected their agreement on the statement, some of the students had difficulty completing tasks on time. This was reflected in their interview responses, where a lack of time or problems with time management were identified as one of the main issues encountered by the students.

Feedback and communication systems

The pooled mean of students' responses on feedback and communication systems during the implementation and use of self-learning modules was 3.17 (SD = .61), indicating a positive perceptions and general agreement on the statements under this parameter.

The fourth indicator, which referred to the teachers' way and manner in providing feedback on their assessment tasks, had the highest mean of 3.38 (SD = .69) among the listed indicators. It was followed by the second indicator, which stated that they were satisfied with the support provided by their teacher (x = 3.23, SD = .76), and the eighth indicator, which stated that teachers' feedback on assessment tasks aided their learning (x = 3.20, SD = .64).

These findings imply that students are pleased with the feedback and communication they receive from their teachers during the use of self-learning modules. Students value the way teachers provide feedback on their work as well as the assistance they have received from their teachers. These feedbacks, while limited, are generally beneficial to the students. As emphasized by Gunawardena and McIsaac (2004), being aware of communication barriers associated with distance education enables individuals to be more productive in their current roles. This was also evident in the students' interview responses, with only nine respondents reporting difficulties in obtaining support from their teachers.

Concerning the previously mentioned issue, it is critical to discuss the difficulties that students have in contacting their teachers. As shown in Table 6, some students (x = 2.92, SD = .77) had difficulty contacting their teacher when necessary. According to one respondent, "it is difficult to respond when the teacher does not explain the lesson, and sometimes we do not have a way to contact them." This could be attributed to the teachers' mode of communication when delivering lessons and responding to students.

Teachers typically use social networking sites and platforms to communicate with their students. However, the majority of the students were having difficulty obtaining reliable internet connections. Some of the students were also having financial difficulties in loading their internet service providers.

Parental and community support

The pooled mean of parental and community support was 2.86, with a standard deviation of 0.56. This indicated that respondents generally agreed on the indicators listed under this parameter. The seventh indicator, which referred to their perceptions of the conduciveness of their respective homes as learning environments, had the highest mean of 3.20 (SD = .64). It was followed by the fifth indicator (x = 3.17, SD = .85) focused on the parents' provision of materials needed to complete the tasks in the self-learning modules. Furthermore, the majority of respondents reported a positive attitude toward contacting various personnel in their respective communities (x = 3.16, SD = .75).

These findings could be attributed to the students' preference for and attachment to their respective home environments. Students had to stay at home and complete all of the learning tasks and assessment tools on their own because they were being taught in an alternative delivery mode.

It was also worth noting that many students acknowledged their parents' efforts to provide the materials they needed to complete their tasks in the self-learning modules. This supports the claims of Alghazo (2016) and Delgado (2019) that there should be a necessity of being attentive to their children's school requirements in order to provide substantial guidance in their academic endeavor as self-directed learners. It was also reflected in the interview responses, where only a small number of students identified a lack of materials and financial concerns as obstacles to using the self-learning modules. Furthermore, the students had a good communication with various

personnel in their community. According to one respondent, "I don't see any problems anymore because my parents give me their full support for my education and the community is definitely very supportive of the students and the school."

On the other hand, it should be noted that the first four indicators listed under this parameter had the lowest means. These indicators discussed their parents' assistance when completing module learning tasks. When asked to rate their parents' involvement in their educational activities, some respondents expressed concern about their fathers' (x = 2.60, SD = .84) and mothers' (x = 2.68, SD = .98) non-participation. These were also related to their ratings of the third and fourth indicators, which referred to their request for help from their parents (x = 2.65, SD = .83; x = 2.69, SD = .95). These findings suggest that some students were hesitant to seek assistance from their parents when completing learning activities in self-learning modules. It was also ranked first in terms of student problems encountered during the implementation of self-learning modules. According to their interview responses, some of the respondents' parents were unable to assist their children in learning the lesson's content. "When you ask them, they don't know the answer," one respondent said.

Technological affordances and learning resources

The parameter technological affordances and learning resources had a pooled mean of 2.90 and standard deviation of 0.44. This indicated the respondents' agreement to the listed indicators under this parameter except for the fourth indicator which referred to respondents' reading of relevant learning resources to further understand the content of the self-learning module (x = 2.21, SD = .52).

According to the findings, the third indicator had the highest mean (x = 3.19, SD = .69) among the listed statements. This indicator focused on the respondents' knowledge of how to use various technological tools to further their understanding of the self-learning module's content. It was followed by the seventh indicator, which inquired about the self-learning module's assessment tasks (x = 3.16, SD = .75).

Respondents agreed that assessment tasks in self-learning modules required them to read additional learning materials such as books and journals. Some of the students' responses to interview questions reflected this.

The fourth indicator, on the other hand, had the lowest mean of 2.21 (SD = .52). This statement expressed their disagreement with the need to read other additional learning resources in order to fully comprehend the content of the self-learning module. It was in conjunction with the statement of the first indicator (x = 2.65, SD = .91). Despite the fact that the mean of this statement fit their agreement, some of the respondents stated that they did not have access to various reading materials such as textbooks, reference books, newspapers, and magazines.

As a result, the need for additional reading materials was discovered to be somehow difficult for other students who did not have any available books or reading resources at home. Furthermore, the eighth indicator, which focused on the use of technological tools in performing assessment tasks, had a lower mean of 2.85 (SD = .73) when compared to the other listed indicators. This means that the majority of the assessment tasks in the self-learning modules are rarely completed using other ICT devices.

Self-directed learning and time management

Table 1 also presented the respondents' perspectives on the use of self-learning modules for self-directed learning and time management. The pooled mean for this parameter was found to be 2.77, with a standard deviation of .60. This indicated that they were generally in agreement on this parameter, with the exception of the sixth and seventh indicators, which had the lowest means (x = 2.36, SD = .92 and x = 2.43, SD = .88 respectively) under this parameter, indicating disagreement on these two indicators.

When the individual results of each indicator were examined, it was discovered that the fourth indicator had the highest mean of 3.20 (SD = 0.64). This indicator centered on respondents' participation in learning tasks and assignments. As a result of this result, students took their time getting started on their tasks. This could be explained by some of their answers to interview questions. Some students stated that they had difficulty focusing on the learning activities found in the self-learning modules and that they were easily distracted. Other students expressed concerns about their mental health, with some claiming to be depressed as a result of the overload of learning activities and assessment tasks.

Furthermore, the first indicator had the second highest mean of 3.10 (SD = .75). This indicator indicates that respondents are still eager to learn the content of the self-learning module as long as they have the time. This also confirmed their agreement on the second indicator (x = 3.08, SD = .73), which stated that they knew what they wanted to learn and what was required to learn based on the self-learning module. They had a clear vision on what to learn based on the learning objectives and learning competencies because they had a clear understanding of the statement of the learning objectives and learning competencies (See the discussion on content and instruction design based on Table 5). To accomplish this, individuals must take ownership of their own education and embrace their individual autonomy and preferences (Oshana, 2016). They did, however, emphasize

the importance of time. This implies that teachers should think about how much time it will take to complete the learning tasks in the self-learning modules. Because each subject requires students to complete multiple tasks, having a limited amount of time to complete these tasks proved detrimental to students' educational and mental well-being.

Other notable results included indicators with very low means, indicating that respondents disagreed on these indicators. The sixth indicator, for example, had the lowest mean of 2.36 (*SD* = .92), indicating that respondents were having difficulty developing a learning routine to efficiently manage their time. This was also reflected in the responses to their interview questions, where some expressed concerns about juggling multiple tasks in a short amount of time. According to one respondent, "sometimes there are multiple tasks that require a lot of effort and time, which is very draining and time consuming, the modules are have a lot of activities involving essays, which also eats more time, which makes it difficult to pass on a one week deadline." In addition, the seventh indicator, which discussed personal monitoring and evaluation of their own learning outcomes, had a low mean of 2.43 (*SD* = .88). This implies that students were unable to monitor their own learning progress while self-learning modules were being implemented. This could also be attributed to previous statements about work and performance tasks being overburdened.

Academic performance of the respondents

This section of the discussion focuses on the respondents' academic performance as measured by their grade weighted average (GWA). The purpose of this section was to assess the overall academic performance of the respondents after a year of implementing alternative delivery mode and self-learning modules. According to Table 2, the overall mean of the respondents' academic performance was 84.67, indicating that their overall performance was satisfactory to very satisfactory. The standard deviation of 4.70 indicated that the students' GWA were more evenly distributed around the overall mean. In addition, the highest recorded GWA was 92.61 while the lowest recorded GWA was 72.98.

Table 2

Respondents' Academic Performance in Terms of Their Grade Weighted Average

GWA	Descriptor	Remarks	Frequency (N=100)	%
90 to 100	Outstanding	Passed	7	7.0
85 to 89	Very satisfactory	Passed	53	53.0
80 to 84	Satisfactory	Passed	24	24.0
75 to 79	Fairly satisfactory	Passed	7	7.0
Below 75	Did not meet expectations	Failed	9	9.0

Note. Highest recorded GWA: 92.6, Lowest recorded GWA: 72.98

According to the findings, slightly more than half of the respondents (53.0%) were able to obtain a very satisfactory GWA, while a quarter (24.0%) obtained satisfactory results. Furthermore, only a small percentage of respondents (7.0%) received an excellent GWA. However, nine students (9.0%) did not meet the minimum requirements for a fairly satisfactory rating.

Relationship between perceptions of self-learning module utilization and academic Performance

Another relationship investigated in this study was the one between respondents' perceptions of self-learning module utilization and academic performance. According to the findings in Table 3, each perceptions parameter was correlated with the overall mean of respondents' academic performance. Parental and community support ($r = .33$, $p < .01$); technological affordances and learning resources ($r = .33$, $p < .01$); and self-directed learning and time management ($r = .31$, $p < .01$) were found to have a positive significant relationship with students' academic performance.

Table 3

Respondents' Perceptions of Self-Learning Module Utilization and Academic Performance

Perceptions of self-learning module utilization	Academic performance	
	R	*p*-value
Content and instructional design	.10	.317
Feedback and communication systems	.04	.702
Parental and community support	.33*	.001
Technological affordances and learning resources	.33*	.001
Self-directed learning and time management	.31*	.001

Note. *correlation is significant at 0.01 level (2-tailed)

Parental and community support

According to Table 3, parental and community support was found to be significantly related to students' academic performance (r = .33, p < .01). This implies that parental and community support is critical for the successful implementation of distance learning and self-learning modules among high school students. When confronted with issues related to the activities they have in self-learning modules, they frequently refer to their parents as the more knowledgeable experts.

It also emphasized the significance of efforts and activities undertaken by parents and other members of the community to assist students in comprehending the lessons contained in self-learning modules. Students' learning and performance in class instructions improve when parents and community members provide more assistance with learning the lessons, materials for learning, and providing additional examples of the content.

This result was also supported by Viorel's (2013) findings. His study of the impact of parental autonomy support on academic performance found a positive correlation between parental autonomy support and autonomous motivation, emphasizing the critical importance of effort and perseverance as direct predictors of deep processing. As Alghazo (2016) emphasizes, parents must be vigilant about their children's school needs in order to provide sufficient supervision in their academic endeavors as self-directed learners.

Technological affordances and learning resources

The relationship between technological affordances and learning resources and academic performance was discovered to be highly significant (r = .33, p < .01). This implies that if respondents have access to printed reading materials and ICT tools/devices provided by school or available at home, their learning of the contents in self-learning modules will most likely improve. Additionally, students would benefit from the use of various learning resources to comprehend subject matter content, complete learning tasks, and perform various assessment tasks in order to achieve academic goals.

These results corroborate Kapur's (2018) findings that a lack of resources and civic amenities impairs students' concentration on their studies, resulting in failure to achieve the desired outcomes.

Self-directed learning and time management

According to the findings in Table 3, self-directed learning and time management (r = .31, p < .01) have a high significant relationship with academic performance. This means that students who take the initiative in diagnosing their learning needs, developing learning goals, identifying human and material resources for learning, selecting and implementing appropriate learning strategies, and evaluating learning outcomes, with or without the assistance of others, tend to outperform their peers in academic performance. This also implies that students' management of personal and academic engagement time affects their performance in learning activities.

This backs up the findings of other researchers (Boyer & Usinger, 2015; Oshana, 2016; Robinson & Persky, 2020). According to Boyer and Usinger (2015), learner control and active participation in the learning process are critical components of transferring responsibility for learning from teachers to individuals. Furthermore, Robinson and Persky (2020) discovered that learners are the most important key in the process of conceptualizing, designing, implementing, and evaluating learning when using self-directed learning. Oshana (2016) also stated that in order to strive and perform better in school, individuals must take ownership of their own education and embrace their individual autonomy and preferences.

In summary, these findings suggest that the second hypothesis should be rejected because several parameters were discovered to have a high significant relationship with the dependent variable. As a result, the null hypothesis that there is no significant relationship between respondents' perceptions of self-learning module utilization and academic performance is rejected.

Simple linear regression predicting students' academic performance

In this section of the study, a simple linear regression analysis was performed to determine whether respondents' perceptions on self-learning modules predict their academic performance. Results show that the regression model is significant, $R^2 = .07$, adjusted $R^2 = .06$, F (1, 98) = 7.66, $p = 0.0068$ and respondents' perceptions on self-learning modules predict their academic performance, $\beta = 2.86$, $SE = 1.04$, $t = 2.77$, $p = 0.0067$. It is necessary to determine the relationship between the overall mean of the respondents' perceptions of self-learning module utilization and their academic performance in order to perform simple linear regression analysis. According to Pearson Product-Moment correlation results, respondents' perceptions of self-learning module utilization and academic performance are positively related ($r = .27$, $p < .05$), indicating that students who have higher perceptions of self-learning module utilization have higher academic performance.

Furthermore, the model summary shows that the $R^2 = 0.07$, Adjusted $R^2 = 0.06$. R is the correlation coefficient between X (Perceptions of Self-Learning Module Utilization) and Y (Academic Performance) while the R^2 is the coefficient of determination. It is the percentage contribution of the independent variable (Perceptions of Self-Learning Module Utilization) to the changes in the dependent variable (Academic Performance). In other words, about 7% of the total variation or changes in their academic performance is accounted for or is explained by their perceptions of self-learning module utilization. This indicates that 92% is explained or accounted for by other variables not included in this model.

Table 4

Analysis of Variance (Academic Performance)

	Model	Sum of squares	*df*	Mean square	*F*	*p*-value
	Regression	158.22	1	158.22	7.66	.007[b]
1	Residual	2025.34	98	20.67		
	Total	2183.56	99			

Note. a. Dependent Variable: GWA, b. Predictors: (Constant), Perceptions

However, the ANOVA result shows that the model is significant, F (1, 98) = 7.66, $p < .05$, indicating that the data did match the model or the regression equation: Y (Academic Performance) = a (constant) + b coefficient X (Perceptions of Self-Learning Module Utilization).

Table 5

Simple Linear Regression Predicting Students' Academic Performance

Predictors	β	*SE*	*t*	*p*
Constant	76.26	3.07	24.81	.000
Perceptions of self-learning module utilization	2.86	1.04	2.77	.007

As shown in Table 5, respondents' perceptions on self-learning modules predict their academic performance, $\beta = 2.86$, $SE = 1.04$, $t = 2.77$, $p < .05$. In other words, the null hypothesis stating that respondents' perceptions of self-learning module utilization do not predict the students' academic performance is rejected.

These findings have important implications for education in the context of self-learning modules. The positive correlation between students' perceptions of module utilization and academic performance suggests that improving module experiences could enhance academic outcomes. However, the low R-squared value indicates that other factors significantly influence performance. Educators should focus on enhancing module quality as one strategy to improve academic performance, while also considering other influential factors. The significant predictive relationship underscores the importance of regularly assessing and responding to student feedback on self-learning modules to optimize their effectiveness in supporting academic achievement. Overall, these results highlight the need for a multifaceted approach to improving academic performance in module-based learning environments.

Conclusions and recommendations

Based on the results of this study pertaining to respondents' perceptions of self-learning module utilization, students generally viewed the use of self-learning modules favorably, with feedback and communication systems receiving the highest ratings. However, self-directed learning and time management were identified as areas needing improvement. School administrators should develop professional training for teachers on effective implementation of self-learning modules, with a focus on enhancing students' self-directed learning and time management skills. Additionally, it is necessary to provide orientation for parents on how to support their children's learning at home. While the study collected grade weighted average for analysis as a representation of

academic performance of the respondents, it is also recommended that future studies should include a more detailed analysis of academic performance metrics to provide a comprehensive understanding of student achievement in relation to self-learning module utilization.

On the other hand, a significant positive relationship was found between perceptions of self-learning module utilization and academic performance. Perceptions were found to be a predictor of academic performance, although they accounted for only a small portion of the variance. It is therefore suggested that there is a need to develop a more systematic and effective program for implementing self-learning modules, involving collaboration among school administrators, curriculum experts, teachers, parents, and community members. Future research should explore additional variables that may influence academic performance in this context.

Looking back at its initial aim, this study contributes to our understanding of how junior high school students perceive self-learning module utilization and its relationship with academic performance. The findings suggest that while students generally view self-learning modules positively, there are areas for improvement, particularly in self-directed learning and time management. The positive correlation between perceptions and academic performance, albeit weak, indicates that enhancing students' experiences with self-learning modules could potentially improve their academic outcomes. These findings have important implications for educators and policymakers seeking to improve student learning outcomes in junior high school settings, especially in distance learning contexts. However, the limited explanatory power of the model suggests that other factors not included in this study play a significant role in determining academic performance.

Moreover, the study's results align with theories of self-regulated learning and distance education, which emphasize the importance of student engagement, feedback systems, and self-management skills in academic success. However, the relatively weak predictive power of perceptions on academic performance suggests that these theories may need to be expanded or modified to better explain learning outcomes in the context of self-learning modules.

It is important to note a significant limitation of this study. While collecting students' perceptions on self-learning module utilization and their grades at the end of the year provides some insights, it is insufficient to fully address the complexity of the research objectives as stated. A more comprehensive research design would be necessary to thoroughly explore the relationships between module utilization, perceptions, and academic performance over time.

In conclusion, while this study provides valuable insights, it also highlights the need for more comprehensive research to fully understand the complex dynamics of self-learning module utilization and its impact on academic performance in junior high school settings.

Conflict of interest

The author declares no conflicts of interest.

Author contribution

The author performed all the tasks contributing to the development of this research. Fatima L. Mercado: conceptualization, data curation, formal analysis, funding acquisition, investigation, methodology, project administration, software, resources, supervision, validation, visualization, writing – original draft, writing – review & editing

Data availability statement

Data will be made available on request.

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