

The Use of Self-Instructional Learning Kit Strategy Mind Mapping Approach as Innovative Strategies in Teaching Economics Under Modular Distance Learning

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Abstract

This study aimed to provide a generic pedagogical-based approach to reaching out to learners in the new normal. This study sought to answer the performance of the Grade 9 students in Economics before and after the utilization of the Self-Instructional Learning Kit and Mind Mapping Approach. The study was quantitative in nature and uses the descriptive method of research with ninety-two (92) grade 9 students in Emilio V. Quizon National High School San Andres District, Schools Division of Quezon for the school year 2021-2022. The study revealed that the performance of Grade 9 Students in Economics increased from the pre-test to post-test scores utilizing the Self-Instructional Learning Kit and Mind Mapping Approach. There is a significant relationship between the mean assessment of Self-Instructional Learning Kit and students' performance in Economics. The null hypothesis is rejected, which is significant at the 0.5 level. Self-Instructional Learning Kit and Mind Mapping Approach is a recommendable innovative teaching strategy in the new normal where face-to-face is not possible. This study focused on the effectiveness of the Self-Instructional Learning Kit and Mind Mapping Approach as innovative teaching strategies to improve Grade 9 students' performance in Economics in modular distance learning. Another thing is the respondents' assessment of the structure of the Self-Instructional Learning Kit and The Mind Mapping Approach in the most pressing need to deliver quality instruction to the students.

Keywords: Self-Instructional Learning Kit, Mind Mapping Approach, Student Performance

Introduction

In this time of the pandemic, it is undeniably challenging for the educational system to deliver inclusive and equitable quality education. As we all know, there will be no face-to-face classes while we wait for the vaccination. As a result, the Department of Education devised a strategy for learning continuity to adopt remote learning. The modular learning approach is one of the recommended approaches applicable and accessible to all types of learners. Learners are encouraged to work on activities that require concentration and attention to encourage self-study. Teachers will help students learn by encouraging them to finish activities, clarifying, and explaining how things should be done.

Self-Instructional Learning Kit makes learning easier because all essential topics and lessons are already included in the material. Learners must complete a task or expand their knowledge for a specific learning competency. There is a need to redirect them to maximize their participation in their learning endeavor. Teachers must use innovative teaching strategies to respond to our schools' scarcity of books,

materials, and references. Contextualized Self- Instructional Learning Kit prepared by teachers may solve learners' difficulty looking for materials in their study. Learners will benefit by enriching their knowledge by creating avenues through easy access to information.

Mind maps are another approach to increasing learners' creativity and productivity during pandemics. Students can use it for modular distance learning to plan and structure activities. It is also a great learning aid since they encourage the brain to make associations between different keywords, phrases, and images (Sapir 2013).

Using the Self-Instructional Learning Kit and Mind Mapping Approach in teaching Economics and its relationship to the learner's academic performance has received much attention. The present research would like to investigate and assess the use of these tools in the light of modular distance learning in the context of remote schooling. A constructivism method is a pedagogical approach whereby knowledge is not passed from teacher to student but is constructed in the student's social environment. Vasiliki et al. (2016) evaluated an interdisciplinary approach to teaching Economics through innovative secondary education methods. Results show that teachers who employ multiple teaching strategies are more likely to achieve a goal.

Hence, this study provides a generic pedagogical-based approach to reaching out to learners in the new normal and giving them a systematic instruction sequence for individual learning. This is the primary concern of many teachers these days. Moreover, they must make an effort to assist these types of students and train them to become academically proficient in the event of a pandemic. As a result, the researcher incorporated two innovative teaching strategies – Self- Instructional Learning Kit and the mind map approach for Grade 9 learners – into the modular learning setup.

Moreover, the paper presents an initial outline of a cognitive schemata theory of instruction. According to Adani, et. al (2012), the self-instruction strategy is a self-regulation strategy that students can use to manage and direct their behavior as learners. This contrasts with the traditional teacher-dominated teaching strategy, in which the teacher provides learning content, and the learner struggles to learn it. Self-Instruction is thus a cognitive learning strategy that would be highly beneficial to students who have difficulty learning mathematics. It breaks learning down into bits, making it easier for learners to comprehend more effectively.

Ausubel believes that knowledge is organized hierarchically; that further information is significant to the extent that it can be related (attached, anchored) to what is already known. He was a firm believer in meaningful learning over rote memorization. The said theory also explained how learners discover more in-depth and helpful information to develop higher engagement in learning. The provision of practical, adaptive, and responsive materials and activities enabled the students to discover first-hand knowledge.

Objectives of the Study

The study's main objective is to determine the effectiveness of the Self-Instructional Learning Kit Strategy and Mind Mapping Approach as innovative teaching strategies to improve Grade 9 students' performance in Economics under modular distance learning.

Specifically, it aimed to:

1. determine the level of student's performance in Economics before and after using the following strategies:
 - 1.1 Self-Instructional Learning Kit; and
 - 1.2 Mind Mapping Approach

2. evaluate the significant difference between the pre-test and post-test scores of the learners after immersing the research participants in the following strategies
 - 2.1 Self-Instructional Learning Kit Strategy; and
 - 2.2 Mind Mapping Approach
3. describe the assessment of the respondents on the utilization of Self-Instructional Learning Kit in distance learning education in terms of the following?
 - 3.1 Systematic instruction;
 - 3.2 Independent learning; and
 - 3.3 Attitudes toward learning
4. analyze the assessment of the respondents on the utilization of the Mind Mapping Approach in implementing distance learning education in terms of the following?
 - 4.1 Generating of ideas by association;
 - 4.2 Visualizing thinking association; and
 - 4.3 Organization of information
5. determine the significant relationship between students' performance in Economics and the respondent's mean assessment on the use of Self-Instructional Learning Kit and the Mind Mapping Approach.

Methodology

Research Design. This study utilized a pre-experimental research design, specifically a pretest-posttest design. According to Choueiry (2020) stated the one-group pretest-posttest design which measures the outcome of interest, is measured two times: once before and once after exposing a non-random group of participants to a specific intervention/treatment, and there is no control or comparison group involved in this type of study design. The researcher sought to describe the effectiveness of the Self-Instructional Learning Kit and Mind Mapping Approach as perceived by the Grade 9 students at Emilio V. Quizon National High School.

Respondents of the Study. Ninety-two grade nine students in Emilio V. Quizon National High School, San Andres, Quezon were the respondents of the study. The researcher used the enumeration technique to get the total sample of the population. It is a total enumeration since all the respondents are exposed to DepEd Module before the implementation of strategies.

Research Instrument. The pre- and post-test was made and it is composed of 30 items with a table of specifications. It was validated by the master teacher before the immersion of the students. The constructed questionnaire was presented to his adviser for comment and suggestion. After incorporating the idea there are equal distribution-that is, five items for each sub-variable, it was given to non-respondents for face and content validation.

Statistical Treatment of Data. The collected data were analyzed using frequency count, percentage mean, and standard deviation specifically in determining the level of students' learning gains. A t-test was used to determine the significant difference between the score before and after using the Self-Instructional Learning Kit, Mind Mapping Approach. Pearson Correlation was utilized to test the relationship between the performance of Grade 9 students in Economics and the mean assessment of the respondents.

Results and Discussion

1. Level of Student’s Performance in Economics before and after using the Following Strategies

1.1. Students’ scores in Economics before and after the Implementation of Self- Instructional Learning Kit

Table 1

Scores of the Grade 9 Students in Economics before and after the Implementation of Self- Instructional Learning Kit

Level of Performance	Pre-test		Mean Percentage Score (Target)	Posttest		Mean Percentage Score (Accomplishment)	Gain
	Frequency	Percentage		Frequency	Percentage		
Outstanding (90% - 100%)	0	0.00	75%	15	32.61	87.32%	12.32
Very Satisfactory (85% - 89)	0	0.00		23	50.00		
Satisfactory (80% - 84%)	2	4.35		3	6.52		
Fairly Satisfactory (75% - 79%)	11	23.91		5	10.87		
Did Not Meet Expectations (74% below)	33	71.74		0	0.00		
Total	46	100		46	100		
Mean	70.19 (Did Not Meet Expectations)		87.32 (Very Satisfactory)				

The data revealed that the use of Self Learning Instructional Kit improves the academic performance of Grade 9 students in Economics. Students who did not meet expectations, fairly satisfactory and satisfactory academic performance, had become fairly satisfactory, satisfactory, very satisfactory, and outstanding after using the kit.

Supporting these findings, Hambre (2019) claims using a Self-Instructional Learning Kit can help students study at their speed while increasing their desire to complete the lesson's tasks on a weekly basis. In these challenging times, where face-to-face sessions aren't possible, this is a highly recommended technique. Students can use learning strategies to think through and plan solutions to problems.

1.2. Students’ scores in Economics before and after the Implementation of Mind Mapping Approach

The data suggest that the use of the Mind Mapping Approach improves the academic performance of the Grade 9 students in Economics. Increasing the performance signifies the increasing learning of grade 9 students. This approach is recommendable to use since we don't have face-to-face classes as of today.

According to Al Naqbi, (2011) mind mapping has been observed in UAE schools to help students improve their writing skills and demonstrated how mind mapping could help students plan and organize their ideas for writing tasks under exam conditions.

Table 2
Scores of the Grade 9 Students in Economics Before and After the Implementation of the Mind Mapping Approach

Level of Performance	Pre-test		Mean Percentage Score (Target)	Posttest		Mean Percentage Score (Accomplishment)	Gain
	Frequency	Percentage		Frequency	Percentage		
Outstanding (90% - 100%)	0	0.00		7	15.22		
Very Satisfactory (85% - 89)	0	0.00		6	13.04		
Satisfactory (80% - 84%)	0	0.00	75%	22	47.83	84.68%	9.68
Fairly Satisfactory (75% - 79%)	15	32.61		11	23.91		
Did Not Meet Expectations (74% below)	31	67.39		0	0.00		
Total	46	100		46	100		
Mean	71.35 (Did Not Meet Expectations)			84.68 (Very Satisfactory)			

Furthermore, Masoud, H., and Ibrahim, O. L. (2017) emphasized that the mind-map image allows students to promote new awareness, different types of discoveries, and deeper reflection on their work.

2. Significant Difference between the Pre-Test and Post-Test Scores of the Learners After Immersing the Research Participants in the Following Strategies

Table 3
Significance Difference between the Pre-Test and Post-Test Score Results of Grade 9 Section A using Self-Instructional Learning Kit

Variable Compared	Df	Variance	Mean	Computed t-value	Critical t-Value	p-value	Interpretation	Decision
Pre- Test	45	10.89	13.80					
				3.2	1.68	0.0009	Significant	Reject Ho
Post-Test	45	18.71	18.70					

Table 3 presents the t-test results on the significant difference in the pre-test and post-test scores of the respondents using the Self-Instructional Learning Kit. The computed t-value of (3.20) is greater than the critical t-value of (1.68) and p-value of (0.0009). Since the p-value is less than the level of significance the null hypothesis is rejected. This means that the performance of the learners in the pre-test and post-test statistically significant at a 0.05 level of significance. Therefore, Self-Instructional Learning Kit is an effective strategy for enhancing students' performance in Economics.

Mohd Jackie et al. (2016) say the quality of student-centered learning depends largely on how teachers choose and use the appropriate learning kit. In face-to-face settings, teachers usually still teach while writing on the blackboard (Reighluth, 2012) and not using the learning kit (Abdullah, Zainal Abidin & Mohamad, 2012). The learning kit is aimed to make it easier for students to learn and understand the subject matter.

Table 4
 Significant difference between the Pre-Test and Post-Test Score Results Grade 9 Section B using Mind Mapping Approach

Variable Compared	Df	Variance	Mean	Computed t-value	Critical t-Value	P-value	Interpretation	Decision
Pre- Test	45	12.70	13.97	2.74	1.68	0.004	Significant	Reject Ho
Post-Test	45	19.64	16.11					

Table 4 presents the t-test results on the findings of the significant difference in the pre-test and post-test scores of the respondents using the Mind Mapping Approach, with a computed t-value of (2.74), a critical t-value of (1.68), and p-value of (0.004). Since the p-value is less than the level of significance the null hypothesis is rejected. This means that the performance of the learners in the pre-test and post-test is statistically significant at a 0.05 level of significance. Therefore, Mind Mapping Approach is an effective strategy for enhancing students’ performance in Economics.

In support, of Parikh (2016), mind maps are useful for solving problems, brainstorming ideas, learning new vocabulary, taking notes and improving reading skills, and preparing presentations. In the Mind Mapping Approach, first, the main idea is specified, and then the linear view is explained. This method is suitable for teachers and students for the recurrence and easy-to-understand difficult topics.

3. Mean Assessment of the Respondents on the Utilization of Self-Instructional Learning Kit in Distance Learning Education

3.1. In terms of Systematic Instructions

Table 5
 Mean Assessment on the utilization of Self-Instructional Learning Kit in terms of Systematic Instructions

Indicators	Standard Deviation	Mean	Verbal Interpretation
1. I quickly follow the step-by-step procedure to answer activities.	0.54	4.71	Strongly agree
2. The step-by-step guide in answering learning activities was clear.	0.42	4.84	Strongly agree
3. I can easily find answers in learning activities in Economics because of explicit instruction.	0.68	4.52	Strongly agree
4. There is a word bank to find the meaning of difficult words in the activities.	0.64	4.63	Strongly agree
5. I complete all Economics activities on time.	0.77	4.47	Strongly agree
Composite Mean	0.63	4.63	Strongly agree

Indicator five got the lowest mean of (4.47) or strongly agree. This indicates that the students need more time answering activities since several subjects need to be accomplished at the proper time, as stated in the homeroom schedule of students in every subject area. Indicator 2 got the highest mean of 4.84 or

strongly agree which indicates that students learn from the step-by-step procedure using the Self-Instructional Learning Kit.

In support, of Hambre, (2019) The Self-learning instructional kit is a tool that enhances learning and develops creativity through manipulative processes and thinking skills. It also relates the lesson to the real world and develops self-confidence in the subject among the students. More facilitative approaches to teaching Economics or concepts are used in innovative teaching strategies (Samba 2010).

3.2. In terms of Independent Learning

Table 6

Mean Assessment on the utilization of Self-Instructional Learning Kit in terms of Independent Learning

Indicators	Standard Deviation	Mean	Verbal Interpretation
1. I am motivated to study lessons in Economics.	0.89	3.94	Agree
2. I understand the main point of the daily lesson.	0.80	4.30	Strongly Agree
3. I am more confident answering learning activities.	0.74	4.41	Strongly Agree
4. I learned a lot without the guidance of my parents.	0.61	4.59	Strongly agree
5. I am responsible for my learning.	0.68	4.45	Strongly Agree
Composite Mean	0.74	4.34	Strongly Agree

The Self-Instructional Learning Kit is developed their independent learning at their own pace. Indicator 1, which got the lowest mean of (3.94) or agree, indicates that motivation is needed to answer the activities. Tarronas (2020) stated that motivation in implementing distance learning is necessary for the students to accomplish the learning on time.

Self-Instructional Learning Kit allows students to learn at their own pace, and it is recommended as an innovative teaching strategy. Students are designed, engaged, and challenged, resulting in increased student interest and understanding. Independent learners have a high level of confidence in developing their learning autonomy (De Rosales 2020).

3.3. In terms of Attitudes toward Learning

Table 7

Mean Assessment on the utilization of Self-Instructional Learning Kit in terms of Attitudes Towards Learning

Indicators	Standard Deviation	Mean	Verbal Interpretation
1. It allows me to think to elaborate my answer in the learning activities.	0.51	4.78	Strongly agree
2. I enjoy doing activities in Economics.	0.62	4.52	Strongly agree
3. It encourages me to seek additional information about the topic from outside sources.	0.62	4.52	Strongly agree
4. It gives me a sense of meaning, and I feel I have achieved or learning something.	0.72	4.39	Strongly agree
5. It helps me to make the tasks more manageable.	0.37	4.76	Strongly agree
Composite Mean	0.57	4.52	Strongly agree

Indicator 1, got the highest mean of (4.78) or strongly agree indicates that students allow thinking and detailed answers in the learning activities. De Rosales (2020) states that since the students are not into homeschooling and distance learning, this is a sort of adjustment for them to learn at their own pace.

The Self-Instructional Learning Kit helps to promote attitudes towards learning. Attitude is a state of mental or neural readiness that serves as both the premise and the outcome of behavior. Just as a positive reaction in a situation with a positive attitude can affect the approach to events and phenomena, so can a negative reaction with a negative attitude.

4. Mean Assessment of the Respondents on the Utilization of the Mind Mapping Approach in Implementing Distance Learning Education

4.1. In terms of Generate Ideas by Association

Table 8
 Mean Assessment on the utilization of Mind Mapping Approach in terms of Generate Ideas by Association

Indicators	Standard Deviation	Mean	Verbal Interpretation
1. Arrows in mind mapping help me to explain and generate ideas between two connected words or pictures.	0.62	4.21	Strongly Agree
2. It helps me to develop ideas effectively using lines, pictures, and words.	0.65	4.08	Agree
3. It helps me to generate ideas from the broader topic to a specific one.	0.72	4.15	Agree
4. It helps to solve problems using diagramming to find out valuable information.	0.66	4.23	Strongly Agree
5. It helps me to memorize ideas from the very beginning up to the end of the lesson.	0.90	3.95	Agree
Composite Mean	0.71	4.10	Agree

The data above suggest that mind mapping approach helps generate ideas to answer the activities in the Economics test. Students use the arrows to explain and generate ideas between two connected words or pictures. It also aids in the organization of words or numbers to solve specific problems or questions more easily.

In support, Keles (2012), using the Mind Mapping Approach allows students to learn in a more meaningful way. The Mind Mapping Approach helps students gain new knowledge and connect that knowledge to prior knowledge. Students can use arrows to connect ideas between words and pictures. The most practical benefit of this approach is that students can generate broader ideas in response to specific ideas.

4.2. In terms of Visual thinking association

Indicator 3, which got the highest mean of (4.30), indicates that students can comprehend well and establish good explanations of a specific topic with pictures and graphs. While indicator 2, which got the lowest mean, suggests that not all students are not into visual representation; others learned better in lecturing.

Table 9

Mean Assessment on the utilization of Mind Mapping Approach in terms of Visual thinking association

Indicators	Standard Deviation	Mean	Verbal Interpretation
1. It helps me to interpret data from the activities using pictures.	0.70	4.06	Agree
2. It gives me a clear idea of what information is needed in the activities.	0.96	3.82	Agree
3. It helps me to comprehend using pictures and graphs.	0.80	4.30	Strongly Agree
4. It helps me identify and associate information using colors, for example, a graph with numerical data using warm colors to indicate the data is high-value.	0.95	3.95	Agree
5. It helps me to explore complex ideas from the daily topic in Economics.	0.77	4.08	Agree
Composite Mean	0.83	4.04	Agree

Collias (2011) asserts that visual thinking can sometimes outperform verbal thinking when it comes to brainstorming, asking questions, and connecting previously thought-to-be-unconnectable ideas. A mind map is a visual presentation of an overall vision that scholars, singers, or students can use. It combines the visual and verbal in an alternative presentation to generate, structure, and classify ideas.

4.3. In terms of the Organization of Information

Table 10

Mean Assessment on the utilization of Mind Mapping Approach in terms of Organization of Information

Indicators	Standard Deviation	Mean	Verbal Interpretation
1. It helps me to organize ideas and understand the topic quickly.	0.66	4.34	Strongly Agree
2. I can choose ideas well in writing because I use mind mapping.	0.74	4.43	Strongly Agree
3. It gives me better ideas in answering learning activities in Economics.	0.52	4.82	Strongly Agree
4. It helps me to connect the information from the more significant ideas to specific ones.	0.80	4.32	Strongly Agree
5. It helps me to clustered similar ideas.	0.92	3.97	Agree
Composite Mean	0.73	4.38	Strongly Agree

Indicator 3, which got the highest mean of (4.82), indicates that the Mind Mapping Approach, particularly in organizing information, helps students manage ideas in answering different learning activities in Economics. While indicator 5, which got the lowest mean of (3.97), indicates that experiencing difficulty in similar clustering ideas is because of the many terminologies in Economics and the dates of events.

Moreover, Stovern (2014) stated that Mind mapping is a great way to capture your thoughts and organize them visually. By planning with a mind map, you promote creative thinking and avoid forced linear thinking. And yet, mind mapping often ends up being a buzzword, with little explanation of what it means and how you'd go about making a mind map.

5. Significant Relationship between Students' Performance in Economics and the Respondent's Mean Assessment on the use of Self-Instructional Learning Kit and Mind Mapping Approach

Table 11

Correlation of Mean Assessment on Self-Instructional Learning Kit and Student Performance in Economics

Mean Assessment	Mean Student Performance	Correlation Coefficient	Interpretation	p-value	Interpretation	Decision
4.50	87.32	0.864	High Correlation	0.00001	Significant	Reject Ho

*Legend: ** Correlation is significant at 0.01 level (one-tailed)*

Table 11 shows the significant relationship between the mean assessment on Self-Instructional Learning Kits and students' performance in Economics. Students can easily answer the activities in the self-instructional learning kit because it was guided by part and the part, according to the researcher's interview while conducting the survey. The data presented above indicate that the Self-Instructive Learning Kit is a viable strategy in the new normal.

In support, Pecson (2020), states that effective use of the Self-Instructional Learning Kit has enhanced learners' competencies and encouraged teachers to provide supplemental learning resources for self-directed learning.

Table 12

Correlation of Mean Assessment on Mind Mapping and Student Performance in Economics

Mean Assessment	Mean Student Performance	Correlation Coefficient	Interpretation	p-value	Interpretation	Decision
4.18	84.68	0.842	High Correlation	0.00001	Significant	Reject Ho

*Legend: ** Correlation is significant at 0.01 level (one-tailed)*

Table 12 shows the significant relationship between the mean assessment on Mind Mapping and students' performance in Economics. The computed mean assessment of 4.18 while the computed students' performance in Economics is 84.68. The r-value based on the computed value is 0.842 interpreted with High Correlation and the computed p-value was 0.00001 implied that the relationship between the mean assessment and student performance in Economics is significant. According to the data presented above, Mind Mapping is another strategy that will aid in the promotion of learning during these trying times.

According to Yetkiner (2011), students cited the benefits of mind mapping as ensuring permanent learning, activating the right and left lobes of the brain, facilitating remembrance, and being a practical form of presentation that can be prepared quickly.

6. Implications of the findings of the Study in Teaching Economics

In distance learning education learning materials were the main source for the learners to cope with the activities to gain skills align with the most essential learning competencies given by the DepEd. Self-Instructional Learning Kit and the Mind Mapping Approach revealed that this strategy in remote teaching is effective. The material must promote a higher level of understanding of concepts in a variety of subjects. The Self-Learning Instructional Kit is a simplified and modularized form of learning material composed of systematically sequenced learning materials. It redirects learners' attitudes toward becoming active participants in the educational process and provides supplementary materials to address the scarcity of available books and other resources or references in schools. Self-learning is a modern form of learning

that has supplemented traditional learning with astounding results. It is self-directed and tailored to the needs of the students reinforce the development of independent and child-centered learning. Since we are in a pandemic, this approach serves as pathway for students to continue learning without the assistance of teachers.

Conclusion

Below are the conclusions which have been based on the findings of the study.

1. The performance of Grade 9 Students in Economics improved from the pre-test to post-test scores utilizing the Self-Instructional Learning Kit and Mind Mapping Approach.
2. Pre-test and post-test scores of respondents utilizing the Self-Instructional Learning Kit differ significantly, rejecting the null hypothesis.
3. Self-Instructional Learning Kit and Mind Mapping Approach were recommended strategy in the new normal, as stipulated by the Department of Education. The Self-Learning Instructional Kit is an innovative tool meeting the standards of the K-12 Curriculum in providing relevant and localized content to teachers and learners.
4. The computed mean showed a high correlation. The results showed a High Correlation between the mean assessment on the Mind Mapping Approach and students' performance in Economics. Null hypothesis rejected.
5. Self-Instructional Learning Kit and Mind Mapping Approach have increased student performance and supplied self-directed learning tools in Economics education in the new normal.

Recommendations

Based on the conclusions, the following recommendations are hereby offered.

1. Researchers suggest developing a complete set of self-instructional learning kits and a mind-mapping approach for each quarter of Economics 9.
2. The researcher recommended that the above strategy effectively enhance students' performance in Economics. It is also recommended that a different kit and approach be used in other learning areas in High School.
3. The Self-Instructional Learning Kit and Mind Mapping Approach were recommended strategy in the new normal, as stipulated by the Department of Education.
4. It is recommended to develop a compilation of self-instructional learning kits and mind-mapping approaches in various subject areas. Instructors may then distribute these tools at their institutions to help students learn more effectively.
5. It is recommended that researchers conduct research focusing on various models or digital formats in the process of creating a Self-Instructional Learning Kit and that a Mind Mapping Approach be facilitated for further study.

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