SELF-DIRECTED SKILLS-BASED MATERIAL IN COOKERY TOWARDIMPROVED STUDENTS' PERFORMANCE

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Abstract

Educators are facing a lot of challenges today as well as learners in the teaching-learning process. It is very important to follow the procedures of Self-Directed Learning to be able to apprehend if the learning took place. The educator must observe the signs of readiness for self-directed learning, including self-discipline, organization, autonomy, the ability to communicate well, open-mindedness to criticisms and feedback, self-evaluation, and reflection. The success of the students in self-directed learning was observed in their evaluation results and self-reflection. This study employed the one- group pretest-posttest research design. This method was the most appropriate since the study dealt with finding the effectiveness of the Self-Directed Skills-Based Material. The participants of this study were one hundred (100) Grade 7 Level students at San Pedro National High School. The instruments that were utilized to obtain the needed data were a pretest, posttest, and performance test to measure the performance of the learners before and after the use of the learning material. Self-Directed Skills- Based Materials were proven effective in acquiring knowledge and skills in Cookery. More importantly, there is a significant difference in the conceptual improvement of the respondents before and after the use of the learning material.

Keywords: Self-Directed Learning; Performance; Pretest; Posttest; Self-Directed Skills-Based Materials

1. Introduction

How information is gathered and used has undergone substantial changes as it has been more publicly available from a number of sources. This has called into doubt the idea that knowledge is absolute and precise, and that information is irreversible. Additionally, the idea of learning as memorizing information in separate compartments was replaced with a problem-oriented viewpoint that was centered on conceiving, understanding, and comprehending (Aspin and Chapman, 2018). Memory became less important as learning how to learn became more popular and our knowledge of information and learning increased. People who have learned how to learn have the capacity to plan their own learning, apply new information to wider settings, overcome obstacles, and be open to growth and change (Giese, 2016; Fredriksson and Hoskins, 2017; Hofmann, 2018). Additionally, these individuals have self-assurance and awareness, are open to learning, are capable of using a range of learning techniques, and are conscious of their own learning

preferences, interests, and abilities. One of the foundational skills of lifelong learning is learning how to learn, which is extremely apparent in skill-based courses like Technology and Livelihood Education (TLE). The development of skills does not depend on rote recollection of concepts and instructions for performing tasks.

More specifically, lifelong learning allows individuals to choose their own learning needs and their preferred method of information acquisition. Additionally, they might understand the nature of knowledge rather than memorizing it. Through lifelong learning, people can achieve their learning objectives flexibly and independently, whether they're aiming for higher education or self-improvement. Through lifelong learning, these requirements can be met everywhere, both formally and informally (Aspin and Chapman, 2018). There must be consistency between early learning experiences and professional life in order to attain lifelong learning.

Self-directed learning, also known as independent learning, refers to a person's capacity to take the initiative to identify their own learning needs, determine their learning goals, define the sources from which they will learn, select/apply the best learning strategies, and assess learning outcomes with or without assistance from a third party (Knowles, 2015).

Due to the fact that students complete self-paced procedures aimed at developing a certain ability, TLE is offered to students utilizing learning modules, which is self-directed by nature. Although it is a novel strategy during the pandemic, modular teaching is still effective in face-to-face classroom settings, and it is receiving a lot of attention for experience-based learning opportunities. Therefore, research was conducted to see whether modular training was effective and whether it actually helped students gain skills they would need in the twenty-first century.

Self-directed learning using learning modules, which has been widely implemented across the nation, is giving rise to growing concerns that it may not be promoting effective learning. One key intrinsic disadvantage of modularization as a form of content organization is its propensity to fracture knowledge. Teachers and students had difficulty since there were not enough resources, reading materials, or information available on the topic. It is a significant task for teachers to impart to students the skills they need to fulfill their requirements. The best cure for a lack of resources is to surf the internet. However, there is also a costly, unreliable internet connection (Ambayon, 2020). These problems with teaching and learning methodologies had a significant impact on the New Normal Education.

The purpose of the study was to describe the self-directed experiences of students with the use of learning materials in acquiring skills in Technology and Livelihood Education (TLE) specifically in Cookery.

Theoretical Framework

The skill learning theory of Fitts (1964, 1968) identifies three stages or phases in the learning of individual skills. The first is a cognitive phase in which components and their order are identified along with the basic standards of excellence. The second is a practice fixation phase in which the skills are refined and consolidated into long-term memory through practice and feedback, and the third an autonomous stage is quite important in human skill learning and effective performance since it frees up conscious working memory with its limited capacity to concentrate on incoming data and allows problem-solving to take place quickly and efficiently.

Knowles (2017) highlighted that the self-directed learning guide consists of three parts: The Learner, The Teacher, and Learning Resources. Part 1 contains four inquiry projects that examine the importance of self-directed learning, its assumptions, required competencies, and learning plan design. The nature of the inquiry between the author and teacher in Part 2 is to explore the implications for teachers of having self-directed learners as students. Knowles visualizes the teacher's role as that of facilitator of learning rather than teacher, procedural guide rather than content transmitter. Part 3 consists of 15 learning resources: a comparison of assumptions and processes, competencies of self-directed learning, a learning contract, descriptions of self-directed learners, relationship-building exercises, a consultation skill-practice exercise, a

self-assessment exercise, a content-course self-assessment instrument, guidelines for stating objectives, questioning strategies/techniques, relating methods to objectives, exercises in reading a book proactively and using human resources proactively, types of evidence for different objectives, and examples of rating scales.

The design of self-directed courses needs to ensure that there is sufficient time for the teaching of theory relevant to mastery of skills and sufficient practice to ensure that the skills become securely established. Problem-solving skills will only become possible if there is a good understanding of relevant theory and how it integrates with practice. This indicates that the designers of modular courses also need to plan content and process very carefully, bearing in mind both the characteristics of students and the relevant level of expertise which it is aiming to develop. The limitations of learners at different levels must be observed. There also needs to be incorporation of teaching-learning strategies which will assist in development and consolidation at the existing stage and facilitate progression to higher stages in the development of expertise.

Many students acquire basic learning skills through special workshops, previous learning experiences, classroom exercises, university counselling services, and tutoring (namely from peers or teachers). However, not all students enjoy these opportunities, and the extent of learning development that occurs (despite enrollment criteria set by administrators) will necessarily vary widely across the student population. Previous research has shown that modules -- that provide much-needed social, academic, and adjustment skills including time management, examination strategies, reading, and note-taking techniques -- increase student success through coursework, thereby creating a useful framework from which students can learn effectively. There is reason to believe as well that students will make use of the resources provided to them; that is to say, students who acquire these modular skills prior to their midterm should apply them to any given evaluation (Cramer et.al., 2018). The present study aims to evaluate the effectiveness and utility of self-directed learning through module use in the classroom.

Conceptual Framework

This study shows how self-directed materials gives an impact on the skills and knowledge of the learners in Cookery and the relationship of each learning procedure that contributes to the development of the students.

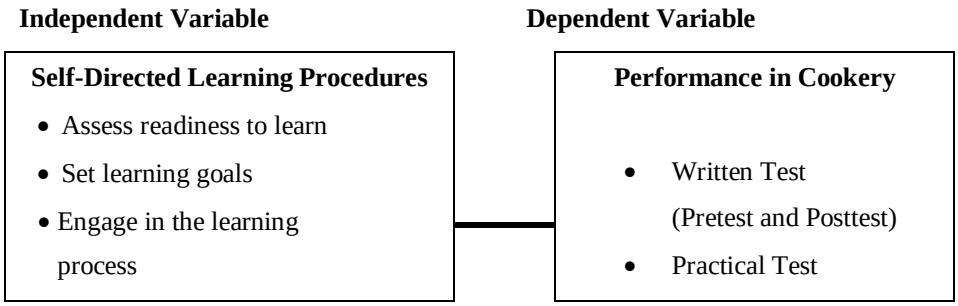

Figure 1. Research Paradigm

The research paradigm is the schematic presentation of the study's independent variable and dependent variable. The independent variable is self-directed learning procedure that includes the assessment of students' readiness to learn, setting learning goals, how they engage in the learning process, and evaluating the learnings of the learners. These variables are constant and directly affect the dependent variable which is the performance which specifically includes the written pretest, written posttest, and practical test in Cookery Course.

This research used the one-group pre-test post-test design to examine the effectiveness of the skills-based materials in acquiring skills or capabilities of the students to properly demonstrate the tasks in Cookery. The same dependent variable is tested in a single participant group both before and after the application of a

treatment in a one-group pretest-posttest design. This design was used to evaluate the effect of the Self-Directed Skills-Based Material in Cookery. This study covers 100 randomly selected Grade 7 students. From 26 sections of the Grade 7, 5 sections were selected because they were handled by a colleague, a good friend of the researcher. In that case, the convenience and accessibility of data gathering was not difficult. The five (5) sections were Daisy, Jasmine, Cosmos, Orchids, and Sampaguita with a class size of 40-45 learners, and only 20 per class were selected randomly based on the adviser's record of attendance.

Researchers prepared pretests and posttests, including a cooking process skills test, and validated by leading teachers and principals, and English structure teachers. A specification sheet was also drawn up before the written test (pretest and posttest). It was created by researchers to ensure consistency between goals, instruction, and points or elements of assessment.

Researchers also created lesson plans for delivering courses using self-directed, competency-based materials. This instrument has been tested for performance. The researcher enlists the selected respondent's TLE teacher to administer an achievement test to assess the learning that occurs after using the self-paced, competency-based materials. Proficiency testing was measured by a variety of tasks set during the course of learning. After validating the equipment, the researchers asked permission to conduct research. This information was obtained from various organizations involved in conducting the research.

Data collected from respondents using test questionnaires and rubrics were statistically processed for analysis and interpretation, and hypotheses were tested at the 0.05 significance level.

The following statistical treatments were used such as descriptive statistics which included mean and standard deviation. Likewise, a two-tailed T-test was used to determine the significant difference between variables.

Statement of the Problem

This study attempts to employ the learning procedures of self-directed instruction in Cookery that may affect the skills of the students in Cookery.

Specifically, it aims to answer the following questions:

1. What is the respondents' mean pre-test scores performance in Cookery as to written test?
2. What is the respondents' mean post-test scores performance in Cookery as to written test?
3. Is there a significant difference between the pretest and posttest scores of respondents as to the written test?
4. Is there a significant difference between the posttest scores and performance test scores in Cookery?

Research Design

The study used the one-group pre-test post-test design to examine the effectiveness of the skills-based materials in acquiring skills or capabilities of the students to demonstrate properly the tasks in Cookery.

A one-group pretest-posttest design is a quasi-experimental research design in which the same dependent variable is measured in one group of participants before (pretest) and after (posttest) a treatment is administered.

This design was used to evaluate the effect of the Self-Directed Skills-Based Material in Cookery.

Sampling Technique

The researcher uses a random sampling procedure in selecting the participants in this study. The researcher chose 100 Grade 7 students in Technology and Livelihood Education class, consisting of 40-45 respondents in each section, who are to be involved in the study. Random sampling is a type of probability sampling in which the researcher randomly selects a subset of respondents from a population. Each member of the population has an equal chance of being selected thus random sampling ensures that results obtained from your sample should approximate what would have been obtained if the entire population had been measured.

Research Instruments

The researcher prepared a pre and posttest which included the Cookery Process Skills Test that was validated by the master teacher/s, head teacher/s, and an English teacher for the language structure. A table of specifications was also constructed beforehand the written test (pretest and posttest) was made by the researcher to ensure the alignment between the items or elements of objectives, instruction, and assessment.

Furthermore, the researcher drafts the lesson plan used in executing the lessons using Self-Directed Skills-Based Material.

A 30-item pretest was prepared by the researcher given before the actual introduction of the lessons from the learning materials. Cookery topics were also introduced using the modular method of teaching which allowed the researcher to administer the same test to the control group.

A 30-item posttest was prepared by the researcher and was given after the actual introduction of the lessons from the learning materials. Cookery topics were also introduced using the modular method of teaching which allowed the researcher to administer the same test to the control group.

The performance test was employed in this instrument, the researcher sought the help of the TLE teachers of the select respondents to conduct a performance test to evaluate the learning that takes place after the use of the Self-Directed Skills-Based Material. The performance test was measured according to the different tasks employed during the conduct of the study. The practical tasks in each lesson were the basis of the result of the performance test of the respondents.

PART I. Distribution of the Mean Pretest and Posttest of the respondents in Cookery before and after using the Self-Directed Skills-Based Material in Cookery.

Table 1 Pretest Scores:

Scores	**Frequency**	**Percentage**	**Interpretation**
29 - 30	0	0.00	Mastered
26 – 28	0	0.00	Closely Approaching Mastery
20 - 25	2	2.00	Moving Towards Mastery
11 – 19	63	63.00	Average
5 – 10	34	34.00	Low
2 – 4	1	1.00	Very Low
0 - 1	0	0	Absolutely No Mastery
total	100	100.00	

Table 1 shows the DM No.160, S. 2012, as the basis used to assess the quality of learning outcomes in the Department of Education. The National Education Testing and Research Center (NETRC) conducts the National Achievement Tests (NAT) to specified grade or year levels for this system-wide assessment. The assessment results are conveyed to data users in terms of Mean Percentage Scores (MPS) and their descriptive equivalent for data utilization.

There is a corresponding interpretation given based on the scores of the learners.

Table 2 Mean Pretest and Posttest Scores in Written Test in Cookery

	Scores Performance in Cookery		
Test	Mean	SD	Interpretation
Pretest	11.96	3.69	Average
Posttest	16.26	4.32	Average

Legend: 19 – 30 Mastered ; 26 – 28 Closely Approximating Mastery ; 20 – 25 Moving Towards Mastery ; 11 – 19 Average ; 5 – 10 Low ; 2 – 4 Very Low ; 1 Absolutely No Mastery

Adopted from DepEd Memorandum No. 160, s.2012

Table 2 reveals the mean pretest and posttest scores performance in Cookery of the respondents. They obtained a mean pretest score of 11.96 with a standard deviation of 3.69 and a mean posttest score of 16.26 with a standard deviation of 4.32.

The result implies that the achievement level of the respondents is classified as average in terms of their pretest and posttest performances. However, the mean posttest result shows a significant increase of 4.30 which can be attributed to the self-directed skills-based material. This means that the intervention provided them with opportunities to upgrade their self-directed learning skills in terms of Cookery and therefore help them improve their performance.

Table 3 Posttest Scores:

Scores	**Frequency**	**Percentage**	**Interpretation**
29 - 30	0	0.00	Mastered
26 – 28	0	0.00	Closely Approaching Mastery
20 - 25	24	24.00	Moving Towards Mastery
11 – 19	66	66.00	Average
5 – 10	10	10.00	Low
2 – 4	0	0.00	Very Low
0 - 1	0	0.00	Absolutely No Mastery
total	100	100.00	

Table 4 Test of Difference between Pretest and Posttest Scores in Written Test in Cookery

Pretest		Posttest		t	df	Sig. (2-tailed)
Mean	SD	Mean	SD			
11.96	3.39	16.26	4.32	-7.501	99	.000

**Significant at .01 level

Table 4 presents the difference analysis between the pretest and posttest scores in Cookery in terms of mean score results.

As shown in the table, the posttest result with a mean score of 16.26 is significantly different from the pretest result with a mean score of 11.96 tested at 0.01 level of significance (t -7.501 ; p=.000). The posttest mean score is higher than the pretest score, thus, it can be concluded that the self-directed learning procedures in terms of assessing readiness to learn, setting learning goals, engaging in the learning process, and evaluating learning have a positive effect on the performance of the students in Cookery. Building students' self-directed learning skills helped them use what they know and utilize the skills they have. It makes them engage in activities that are relevant, interesting, and enjoyable, thus, making their learning experiences more meaningful and long-lasting.

According to Knowles (1975) self-directed learning in its largest sense refers to an individual's ability to take the initiative to identify their own learning needs, their ability to determine their learning goals, their ability to define the sources they need to learn, their ability to choose/use appropriate learning strategies and evaluate learning outcomes with or without help from an outsider.

Thus, guiding students to be self-directed will lead to good study strategies and a high level of satisfaction which leads to better academic performance.

According to Tekkol and Demirel (2018), individuals who have learned how to learn can organize

their own learning, transfer new information to larger contexts; overcome difficulties, and they are open to development and change, they possess self-confidence and awareness, they are willing to learn, they can use various learning strategies, and they know their own learning styles, interests, and talents. Learning how to learn is among the fundamental skills of lifelong learning. With lifelong learning, individuals can become aware of their own learning needs, and they can decide how they want to reach knowledge. At the same time, they can understand the nature of knowledge instead of memorizing it. With lifelong learning, these needs can be met anywhere both formally and informally (Aspin and Chapman,2001).

In addition, independent learning gives you the freedom to learn something new or challenging when and how you want. And you get to manage the time frame. Many people find time blocking a helpful way to juggle their responsibilities and personal growth. But it's more than just personal preference. In self-directed learning you have to be involved, engaged in a way that often doesn't happen in training. Moving at your own pace, following your own interest, and applying learnings in your own environment –can help to cement what you learn and make it meaningful (Melkonia, 2022).

Table 5 Test of Difference Between Written Test Scores in Terms of Posttest and Performance Test in Terms of Practical Test Scores in Cookery

Transmuted Score (Written Test based on Posttest)		Transmuted Score (Practical Test)		t	Df	Sig. (2-tailed)
Mean	SD	Mean	SD			
83.97	5.04	84.95	6.96	-1.115	99	0.268

Shown in Table 5 is the difference analysis between the written test score as to the posttest and practical test results in terms of the respondents' transmuted mean scores. The result appears that the post-test score (Mean = 83.97, SD 5.04) and practical test result (Mean = 84.95, SD = 6.96) are NOT significantly different as revealed by the p-value of 0.268 which is greater than the specified level of significance. This means that the posttest and practical test are statistically similar thus, further studies are needed to delve into their difference.

Conclusion

Based on the findings of the study, this conclusion was drawn:

1. The hypothesis that there is no significant difference between the pretest and posttest scores of each group of respondents on Skills in Cookery is rejected.
2. The hypothesis that there is no significant difference between the written test scores and practical test scores in Cookery is supported.

Recommendations

From the drawn conclusions, the following recommendations are formulated:

1. Teachers may use the Self-directed Skills-based Material as a supplementary tool to learning.
2. Likewise, students may use this supplementary learning tool as guide and reference in improving or developing their skills and knowledge in Cookery.
3. Future researchers may conduct a similar study that may contribute to a more complex study that may produce different and effective results.

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