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A Study Characteristics of Literate, Intelligent and Cognitive Learners for Students of Mathematics Major, Faculty of Education, Suan Sunandha Rajabhat University

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Abstract.

This research aims to study the characteristics of literate, intelligent and cognitive learners for students in mathematics, Faculty of Education, Suan Sunandha Rajabhat University. The samples used in this research were 39 third-year students enrolled in the second semester of the academic year 2024 by cluster random sampling, from population to students in mathematics major. The researchers collected data from the literate, Intelligent and cognitive assessment during learning management with problem base learning (PBL). The results showed that 1) characteristics of literate learners of target group was in the good level with the mean of 4.37 and S.D. at 0.74. Communicating, collaborating on work there's a focus. Learners are ready to learn all the time and study the information obtained from the classroom to solve problems and research information from modern sources. They use them to synthesize and link them to problems, but they cannot be solved, but the answers are not good enough. 2) Characteristics of intelligent learners of target group was in the fair level with the mean of 2.32 and S.D. at 0.62. They showed the problems to deal with the problems appropriately. Be financially well-rounded and apply it to problems. Problems can be linked to certain social contexts, or aware of changes in society and certain world contexts. And 3) characteristics of cognitive learners of target group was in the fair level with the mean of 2.13 and S.D. at 0.62. They are understanding problems and find solutions, be able to think, analyze problems correctly, and tell them about the limitations of problems or how to solve them. In addition, the students have characteristics of literate, intelligent and cognitive learners exceeded the 60 percent threshold at the 0.05 significant level.

Keywords: Characteristics, Literate, Intelligent, Cognitive, Problem Base Learning (PBL)

1. Introduction

Teacher production is important because it creates people to develop the population in the country and make it a quality global general. In 2019, the Ministry of Education developed a new curriculum for 4 years 2019, with the Ministry of Education defining the qualifications of teachers in accordance with the qualification standards, describing the characteristics of education and education as the science of preparing and developing teachers and educational personnel before stationary and promoting the development of stationary and non-stationed

teachers to have knowledge and professional competence, adhering to values, ideologies, spirituality, and professional performance of teachers [3]. In addition, the government has formulated a 20-year national strategy with an emphasis on innovation goals and has set six desirable graduate attributes: 1) Shared values, 2) good people, morality, ethics, adherence to the teacher profession. 3) Be a learner and be intelligent, know and have wisdom, 4) be a contributor to innovation, 5) be highly competent in learning management, and 6) be a strong citizen [6].

Professional standards of the Teachers' Council of Thailand consist of three standards: knowledge standards and professional experience, operational standards, and standards of conduct. Performance [4]. Found that there is a common and consistent approach between the undergraduate qualification standard framework, the Teacher Professional Literacy Standards Framework, and the 20-year National Strategic Plan: content expertise, teaching and innovation capabilities, three of which are essential to be done with teacher students for future teaching and learning.

As mentioned above, learning standards are an important standard for students to create such features. Nowadays, it has been found that teaching is focused on creating learners to be learners or wise to know, and mathematically mentions mathematical intelligence as being the ability of individuals to provide mathematical reasoning and to convert problems, use mathematics, and interpret mathematical results for problem solving in real-life world contexts, including conceptualization. These help each person to know the role of mathematics in the world and create a good basis for conclusions and decisions that are necessary for 21-century citizens to be creative. Contemplation and participation in the collective society [5].

The learning management focuses on developing students to be literate, intelligent and cognitive and must be a guide that focuses on students as a priority or active learning. PBL aims to practice rational and systematic problem-solving skills for students by organizing learning activities that focus on problem-solving process skills. Querying and collecting data, group processes, recordings, and discussions by the nature of the problem. It occurs in real life and is caused by the experience of the learner or learner may have the opportunity to face that problem. It's a problem that doesn't have a clear answer. It is a complex, vague problem or the learner is suspicious. It's a controversial issue. The debate in society has not been addressed as an issue of interest, something that is curious but ignorant. Problems that cause trouble, damage. It's a penalty, a disaster, and a bad thing. If the information is used alone, it may cause a false answer. The problem is recognized by others as true, but the learner does not believe that it is not consistent with the student's mindset. Problems that may have answers or approaches to seeking answers can be covered by a wide range of learning materials. It is a difficult issue that fits the basics of the learner. It's an issue that can't be immediately answered. Survey required Research and collect data, or experiment before you get an answer, you can't easily predict or predict what knowledge you need. How is the tactic of finding knowledge or answers or the results of knowledge and is a problem that promotes knowledge of content, skills in line with the curriculum.

From such reason, the researchers have created characteristics of literate, intelligent and cognitive learners for students of mathematics major, faculty of education, Suan Sunandha Rajabhat University, to achieve the standard framework of bachelor's degree and teacher professional literacy standard and to create desirable graduate attributes for students in mathematics major, Faculty of Education, Suan Sunandha Rajabhat University.

1.1 Research Objective

To create characteristics of literate, intelligent and cognitive learners for students of mathematics major, faculty of education, Suan Sunandha Rajabhat University

1.2 Hypothesis

Students of mathematics major have the characteristics of literate, intelligent and cognitive learners and learning achievements exceed the 60 percent threshold.

2. Methodology

Scope of Research

Populations used in this research was consisted of 326 students who were students of mathematics major, Faculty of Education, Suan Sunanda Rajabhat University in all years.

Target group used in this research on the subject of Mathematical Finance was consisted of 39 students who were students of mathematics major in the second semester of the academic year 2020 obtained by using cluster random sampling.

Research Tools

1. Design a learning management plan using problems base learning in the Financial Mathematics class for a total of 15 weeks.

2. Designed to evaluate the characteristics of literate, intelligent and cognitive learners consisting of

1. Characteristics of literate in 5-level rating scale,
2. Characteristics of intelligent in 3-level rating scale and
3. Characteristics of cognitive in 3-level rating scale.

For this research, the researchers used a feature assessment to analyze the data in a statistical way in order to find mean and standard deviation by testing t-test one dependent.

3. Results

The 39-students sample assessment was as follows Table 1

Table 1: The Arrangement Of Channels

Characteristics	Mean	SD	Level	P-value
Literate	4.37	0.74	Good	0.00
Intelligent	2.37	0.62	Fair	0.00
Cognitive	2.13	0.62	Fair	0.00

From Table 1 the students have characteristics of literate, intelligent and cognitive learners exceeded the 60 percent threshold at the 0.05 significant level. The Characteristics of literate of students was in the good level with the mean of 4.37 and S.D. at 0.74, the Characteristics of intelligent of students was in the fair level with the mean of 2.37 and S.D. at 0.62 and the

Characteristics of cognitive of students was in the good level with the mean of 2.13 and S.D. at 0.62.

4. Conclusion and Discussion

The characteristics of the learners in all three areas are literate, intelligent and cognitive. 1) The characteristics of literate learners of target group was in the good level with the mean of 4.37 and S.D. at 0.74. Communicating, collaborating on work there's a focus. Learners are ready to learn all the time and study the information obtained from the classroom to solve problems and research information from modern sources. They use them to synthesize and link them to problems, but they cannot be solved, but the answers are not good enough. This is consistent with Worapong Chaiyarak (2015). He said that the teaching process under which instructors use problems is a priority for the academic achievement of learners as well. In particular, innovations are being used in teaching and learning so that students can learn. Understanding what you want is another step. 2) The characteristics of intelligent learners of target group was in the fair level with the mean of 2.32 and S.D. at 0.62. They showed the problems to deal with the problems appropriately. Be financially well-rounded and apply it to problems. Problems can be linked to certain social contexts, or aware of changes in society and certain world contexts. This is consistent with Chaowarit Jongkasakorn (2018). He said that it is important to link problems to certain social contexts or to know the changes in society and in certain world contexts, which is consistent with 21 Century. Have the ability to be self-reliant and adapt to good citizenship and world. 3) The characteristics of cognitive learners of target group was in the fair level with the mean of 2.13 and S.D. at 0.62. They are understanding problems and find solutions, be able to think, analyze problems correctly, and tell them about the limitations of problems or how to solve them. This is in line with Nattaporn Iamthong (2017). This allows learners to use their ability to think about things, to argue or to agree on problems or stories. This is to acquire real knowledge. Problem-based learning management is this base. Teachers must encourage learners to think so that they can ask questions or debate answers. Then the teacher guides you in the right way. Brainstorming is conducted to analyze problems for reasons, objectives, research, and more. Find information that describes the results based on the preset analysis. These are all teaching ways that enhance the abilities of all learners.

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