



# Multiple Intelligences Potentials of Students in Early Childhood Education Surindra Rajabhat University, Thailand

Boonleang Thumthong<sup>1</sup>, Patchara Thongpanruk<sup>2</sup>, Phongnapha Phromkat<sup>3</sup>, Phityanan PhunSopha<sup>4</sup>

<sup>1</sup> Assistant Professor, Faculty of Education, Surindra Rajabhat University, Thailand

<sup>2-4</sup> Lecturer, Faculty of Education, Surindra Rajabhat University, Thailand

## Abstract

*The objectives of this study are: to study the potential of students' multiple Intelligences Potentials and to compare the order of the multiple intelligence potential of students classified within the year and age level. The sample group was 175 students. The multiple intelligence potential survey had a reliability value of 0.93 The data were analyzed using frequency, percentage, one -way analysis of variance, open-ended questions, and content analysis. The research results are as follows:*

- 1. The students had high multi-intelligence potential with an overall average of 86.86%. It was found that 100% of the 4-5th-year students had a high level of multi-intelligence.*
- 2. The overall mean of the multi-intelligence potential of year 1-5 students, in order from large to small number, the first 3 rankings were 1) multi-intelligence potential in self-knowledge and self-understanding 2) multi-intelligence potential in cognition. And understanding of nature 3) the potential of multiple intelligences in music and the overall mean of the lowest multiple intelligence potential is logic and math.*
- 3. Students of different grade levels had multiple intelligences potential, considering the overall picture; there was no statistically significant difference at the .01 level.*
- 4. Students of different old levels had multiple intelligences potential, considering the overall picture; there was no statistically significant difference at the .01 level.*

**Keywords:** Multiple Intelligences, Potentials of Students, Early Childhood Education

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## Introduction

The study of human learning is a topic and issue that helps those involved in the education industry to apply the results of education to design courses and provide consistent and effective learning experiences for learners. In the past and present, there has been a lot of study on learning theory and research on the organization of learning experiences based on various learning theories. to bring a lot of information but what is interesting is matter of potential because the Thai education act 1999 stated in chapter 4, Section 22 , “ Education must be based on the principle that all learners are capable of learning and self-development and are regarded as the most important learners. The educational management process must encourage learners to can develop naturally and to its full potential” and is added in article No. 24 is “organizing the learning process educational institutions and related agencies shall proceed as follows: 1) Organize content and activities in accordance with the interests and aptitudes of the learners. Taking into account differences between individuals. 2) Practice skills in thinking processes, management, and coping with situations and applying knowledge to prevent and solve problems. 3) Organize activities for students to learn from real experiences. Practicing practice to be able to think, act, love to read and continually want to know. 4) Teaching by blending knowledge in various fields. In a balanced manner including cultivating morals good values and desirable characteristics in all subjects. 5) Encourage and support teachers to create an atmosphere, environment, learning materials, and facilitate students' learning and knowledge, including using research as part of the learning process. In this regard, the teacher and students may learn at the same time from various types of teaching aids and scientific sources. 6) Organize learning to happen anytime, anywhere. There is cooperation with parents, guardians, and people in all sides of the community. To jointly develop learners according to their.

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(1998, cited in Siriratrekha, T., 2017) pioneered the theory of multiple intelligences seen. Human intelligence is multifaceted and equally important. It depends on what aspect it stands out. Which is the unique ability of each individual The average person has at least nine intelligences: Linguistic intelligence, Logical–mathematical intelligence, Spatial intelligence, Music-cal Intelligence, Interpersonal intelligence, Intrapersonal intelligence, Naturalist intelligence, and existential intelligence. Developing potential or ability of learners to be knowledgeable Multi-disciplinary competence can be achieved through the five-step learning experience, based on the multiple intelligences for learning (ACACA) model. centered able to develop learners in terms of learning potential, thinking process emotion and the multi-intelligence ability of learners to be higher (Tangpakorn, B., 2020) The results of this study will make the field of early childhood education the faculty of education, Surindra Rajabhat University was more aware of the level of multi-wisdom potential about students. This is because the field of study does not have information on the students' multi-wisdom potential throughout the course since 2013. It is expected that the results of this study will bring such knowledge to be used as a basis for organizing. The learning experience is tailored to students according to their potential.

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## Literature Review

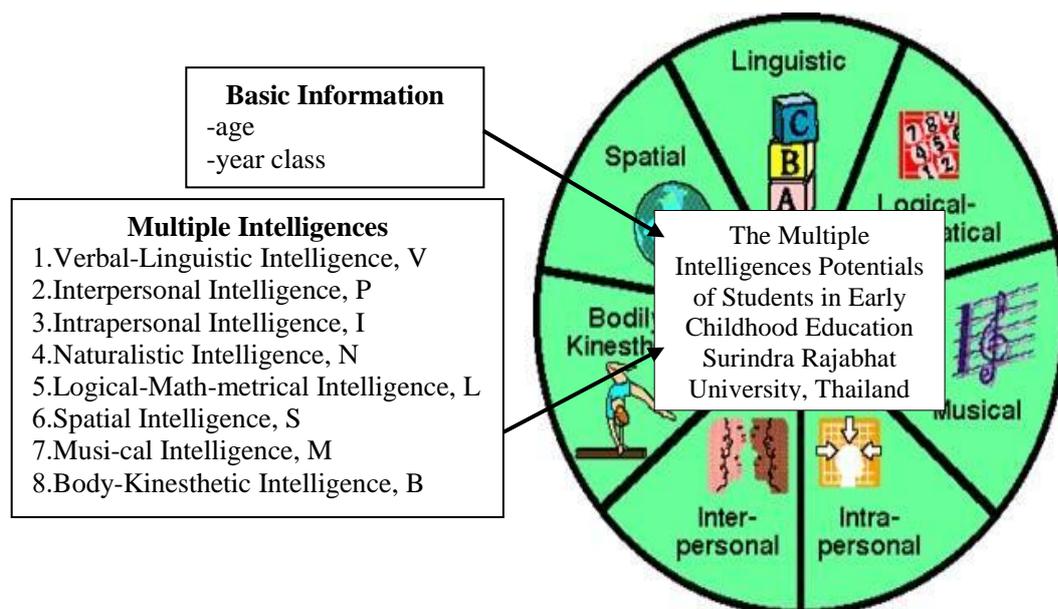
Corno et al. (2002) note that the construct of a single overarching general ability is widely accepted. They report that today there are approximately 120 different measures of general ability. Yet they also acknowledge that not all scholars are in agreement, and they cite in particular the work of Howard Gardner and Robert Sternberg.

Both Gardner and Sternberg advocate that intelligence should not be reduced to a single overarching construct. Gardner (1983) first identified seven distinct intelligences. Today, he (Gardner, 1999) identifies an eighth intelligence. Sternberg (1998) argues that that people possess three independent abilities: analytic (judging, comparing, contrasting, etc.), creative (inventing, discovering, imaging, etc.), and practical (applying, implementing, using, etc.). The focus in this article is on Gardner's multiple intelligences.

Howard Gardner advocates that there are at least eight intelligences that need to be considered (Nelson, 1998): Linguistic: the potential to use language, as used in reading, writing, telling stories, memorizing dates, and thinking in words Logical-mathematical: the potential for understanding cause and effect and for manipulating numbers, quantities, and operations, as used in math, reasoning, logic, problem solving, and recognizing patterns.

## Theoretical and Conceptual Frameworks

Gardner(1998, cited in Pornkul, C., 2011) believed that there are eight types of human multi-wisdom, although not everyone has the same intelligence in all aspects. But every human being has the opportunity to develop those potentials as well. Providing the right support and proper guidance from a young age and throughout a suitable age will enable a person to thrive. Give the right intelligences potential to benefit yourself and society in the end.



**Figure 1: Theoretical and conceptual frameworks**

## Methodology

### 1. Population

The population in this study were students of early childhood education. Surindra Rajabhat University Thailand in the academic year 2021, year class 1-5, there were 250 students.

### 2. Samples

The sample group used in this study were Student of early childhood education Surindra Rajabhat University, in the academic year 2021, yearclass 1-5, totaling 175 students, obtained by simple random sampling from the results of opening the number table (Kanchanawasi, S. et al., 1994)

### 3. The instruments

In this study, it was a survey of students' multiple intelligences potential. One set consisted of 80 questions. Sinthuwong, K. (2007), which divided the characteristics of multiple intelligences potential into 8 areas. The test was characterized as a 5-level rating scale, divided into the most, very, sometimes, rarely, and not exactly. And the revised survey was used to experiment with a group of 30 non-sample students to determine the reliability (Reliability) found that the reliability value was 0.93. The details of the multi-wisdom potential survey are as follows:

- 3.1 Verbal-Linguistic-Intelligence, V of 10 questions.
- 3.2 Logical, Metrical-on Math-Intelligence, L of 10 questions.
- 3.3 Spatial Intelligence, S of 10 questions.
- 3.4 Music-cal Intelligence, M of 10 questions.
- 3.5 Body-kinesthetic Intelligence, B of 10 questions.
- 3.6 Interpersonal Intelligence, P of 10 questions.
- 3.7 Intrapersonal Intelligence, I of 10 questions.
- 3.8 Naturalistic Intelligence, N of 10 questions.

### 4. Implementation of data collection

#### 4.1 Quantitative collection

The study team sent a multi-faith survey to students during the beginning of the academic year 1/ 2021, totaling 250 students. It was found that 175 completed surveys, representing 70.00 percent.

#### 4.2 Qualitative collection

The study team conducted qualitative data collection. The interviews were conducted using the unstructured interview method and the activity record form with 10 students, classified as follows:

**Interview Questions**

- 1) Do the students think that the scores received in the multiple intelligence potential match their abilities or not? And what information about one's self demonstrates that preference and ability at the highest or lowest
- 2) What is the score obtained from high or low activity, is it true or not and why?
- 3) Do students think that teaching and learning in various subjects they are studying is responsive to the students' preferences and abilities or not?
- 4) If the teacher's teaching is according to the students' preferences what should teaching look like?
- 5) Do students have any additional suggestions or questions?

Conducting an interview by the study team explains how to answer the questions. The time required for individual interviews was approximately 15 minutes and provided a list of activities. What students like to do the most and dislike the most as well as giving reasons for the example of that activity?

**5. Actions on data**

A total of 175 surveys were taken to verify the integrity of the data. And scored according to the following criteria:

- 5.1 questions with positive meaning are scored 5, 4, 3, 2, and 1 respectively.
- 5.2 questions with negative meaning were scored 1, 2, 3, 4, and 5 respectively.

**6. Data Analysis**

- 6.1 The quantitative data was analyzed using the following software packages:
  - 6.1.1 Calculate the frequency and percentage classified by year and gender group
  - 6.1.2 Analysis, ANOVA (of One-Way the Analysis of the Variance) between class and gender.
- 6.2 for qualitative data use an interpretation content analysis, synthesis and summary of the results of interviews with students at all.

**Findings and Discussion**

1. Students with high multi-intelligence potential had an overall average of 86.86%. It was found that the students in year 1-5 had the highest level of multiple intelligence, representing 100%, as shown in table 1

No. of respondents	No. of high-level intelligence potential	%	Overall average
Year 1 (60 people)	Year 1 (49 people)	81.7	86.86
Year 2 (25 people)	Year 2 (21 people)	84	
Year 3 (54 people)	Year 3 (46 people)	85.2	
Year 4 (23 people)	Year 4 (23 people)	100	
Year 5 (13 people)	Year 5 (13 people)	100	

**Table 1: shows the number and percentage of students with high multi-intelligence potential classified by year**

2. The overall mean of the multi-intelligence potential of year 1-5 students, ranked from large to small, the first three were: 1) Intrapersonal Intelligence 2) Naturalistic Intelligence 3) Music-cal Intelligence and overall mean. of the multiple intelligence potential, with the least aspect being Logical-Math-metrical Intelligence is classified into each year level as shown in table 2.

MI \ Year class	V	L	S	M	B	P	I	N
Year 1 (49 people)	41	32	35	46	35	43	48	45
Year 2 (21 people)	19	11	15	19	14	19	21	19
Year 3 (46 people)	42	34	39	44	43	45	46	44
Year 4 (23 people)	19	15	19	19	21	19	23	22
Year 5 (60 people)	13	13	11	12	12	13	13	13
<b>Overall average percentage</b>	88.2	69.1	78.3	92.1	82.2	91.5	99.3	94.1
<b>Overall order</b>	5	8	7	3	6	4	1	2

**Table 2: shows the number and percentage of students classified by year of self-assessment in each aspect**

2.1 First-year students have multiple intelligences potential in various fields, ranked from large too small. The first three are 1) Intrapersonal Intelligence (I) 2) Music-cal Intelligence (M) 3) Naturalistic Intelligence (N) and there is the least potential of multiple intelligences. Logical-Math-metrical Intelligence (L)

2.2 Second-year students who have multiple intelligences potential in various fields, ranked from large to small, are: 1) Intrapersonal Intelligence (I) 2) Verbal-Linguistic Intelligence, Music-cal Intelligence Interpersonal Intelligence and Naturalistic Intelligence (V, M, P, N) 3) Spatial Intelligence (S) and the least potential of multiple intelligence is Logical-Math-metrical Intelligence (L)

2.3 Third-year students who have multiple intelligences potentials in various fields, ranked from large to small, are: 1) Intrapersonal Intelligence (I) 2) Interpersonal Intelligence (P) 3) Music-cal Intelligence and Naturalistic Intelligence (M, N) and has the least potential of multiple intelligences. Logical-Math-metrical Intelligence (L).

2.4 Fourth-year students possessing multiple intelligences potential in various fields, ranked from large to small, the first three are 1) Intrapersonal Intelligence (I), 2) Naturalistic Intelligence (N), and 3) Body-Kinesthetic Intelligence (B). And having the least potential of multiple intelligences is Logical-Math-metrical Intelligence (L).

2.5 The fifth-year students have multiple intelligences potential in various fields, ranked from large too small. The first three are 1) Verbal-Linguistic Intelligence, Logical-Math-metrical, Interpersonal Intelligence, Intrapersonal Intelligence and Naturalistic Intelligence (V, L, P, I, N) 2) Music-cal Intelligence and body-Kinesthetic Intelligence (M, B) 3) Spatial Intelligence (S).

In this study, there are issues in which the results of the study can be discussed as follows:

1. The overall mean of the multi-intelligence potential of year 1-5 students, ranked from large to small, the first three were 1) Intrapersonal Intelligence (I) 2) Naturalistic Intelligence (N) 3) Music-cal. Intelligence (M) and the overall mean of the least intelligence potential is Logical-Math-metrical Intelligence (L).

2. Students with different grade levels had multiple intelligences potential, considering the overall picture; there was no statistically significant difference at the .01 level.

3. Students of different ages had multiple intelligences potential, considering the overall picture, there was no statistically significant difference at the .01 level.

The results of the studies shown above show that students at all levels have all high levels of multi-cognitive potential and when these potentials are taken into account, it is found that Most students are more than a percentage 86.86 think themselves capable of 1) Intrapersonal Intelligence (I), 2) Naturalistic Intelligence (N), 3) the Music-cal If Intelligence(N), show that students of early childhood characteristics can be a feature. Desirable of the field that needs students with artistic aesthetics Instructors can use the aforementioned potential of students as a basis for planning an appropriate teaching and learning management, starting from combining the information on the potential of the students with the information about the student's learning style to consider creating a profile. (Profile) of learning (Learning Profile) shown as a map of competence. The student's aptitude in the form of a graph or possibly in the form of other diagrams.

3. Students with different year levels had multiple intelligences potential, considering the overall picture, there was no statistically significant difference at the .01 level as shown in table 3.

Source of variance	df	SS	MS	F
Between groups	100	176.9	1.8	1.19
Within the group	74	110.5	1.5	
<b>Total</b>	174	287.3		-

**\*\* Critical value F .01(500, 125) = 1.410**

**Table 3: shows the results of an overall comparison of the students' multiple intelligences potential during the year level.**

4. Students of different ages had multiple intelligences potential, considering the overall picture, there was no statistically significant difference at the .01 level as shown in table 4.

Source of variance	df	SS	MS	F
Between groups	100	329.1	3.3	0.7
Within the group	74	338.3	4.6	
<b>Total</b>	174	667.4		-

**\*\* Critical value F .01(500, 125) = 1.410**

**Table 4: shows the results of the overall comparison of the students' multiple intelligences potential between the ages.**

5. The qualitative data analysis was used to interpret and draw conclusions from the interview results, which can be summarized as follows:

All the students interviewed were interested. They are willing and want to know about their potential, so they take the time and cooperate very well. The atmosphere of the interview was friendly and interactions between the interviewer and the students and between the students themselves were good. Take turns answering to supplement each other's information. Answer from feelings Comprehension, combined with the data and scores obtained from the survey, all students had multiple cognitive potential in all eight areas, and most of them had similar scores. The highest rated multiple intelligence potential is the type that students have the most potential. But there were some students who saw this inconsistently and had suggestions about the survey they used.

### Suggestions for applying the results of the study

Various disciplines can use the research results shown in the study results to make a profile (Profile) learning of each student with different characteristics.

These characteristics indicate that if to develop students to be more knowledgeable and understand nature may have to bring the subject matter in matters related to nature and the environment that is true to blend in the substance and learning experience. By using a teaching method that is suitable for the students' high potential is learning by allowing students to participate in more group activities. In addition, instructors can combine various abilities of multiple intelligences with students' learning preferences to serve as basic information for curriculum development and teaching and learning in each field of study to manage learning accordingly. The potential in various fields that may be used to profile (Profile) of learning that helps to see the competence of students, which may be used as a basis for further appropriate learning development.

Example: Profile (Profile) Learning (Learning Profile) of students.

Ms. Cherdsuk, K. 3rd year student assessment that like the class M, the highest, followed by I, P and S, representing respectively as follows: 24, 20, 18 and 15 were also evaluated on their own. With the highest potential in Music-cal Intelligence (95%), followed by Intrapersonal Intelligence (90%), Interpersonal Intelligence (80%), Interpersonal Intelligence (70%), Naturalistic Intelligence (64%), Verbal-Linguistic Intelligence (55%) Body-Kinesthetic Intelligence (50%) and Logical-Math-metrical Intelligence (40%) was the last. He said that he doesn't like learning math and doesn't think everything has a reason. Some things may have happened naturally.

If you can use the above information to write a Learning Profile of Ms. Cherdsuk, K. and make a graph in the following manner:

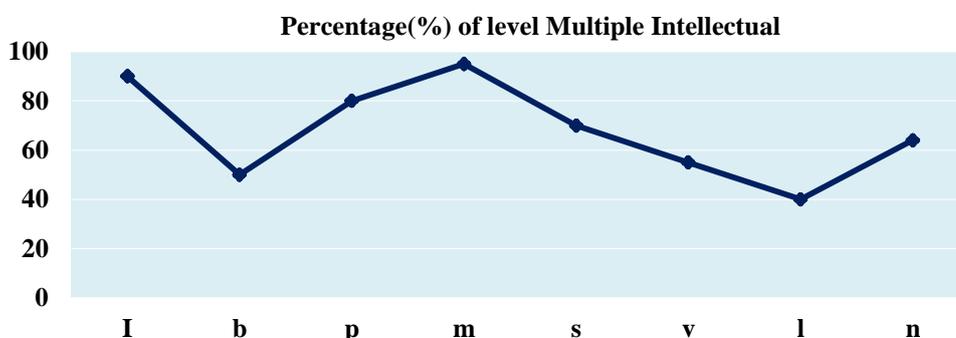


Figure 2: Profile (Profile) is a graph showing the learning profile of Ms. Cherdsuk, K.

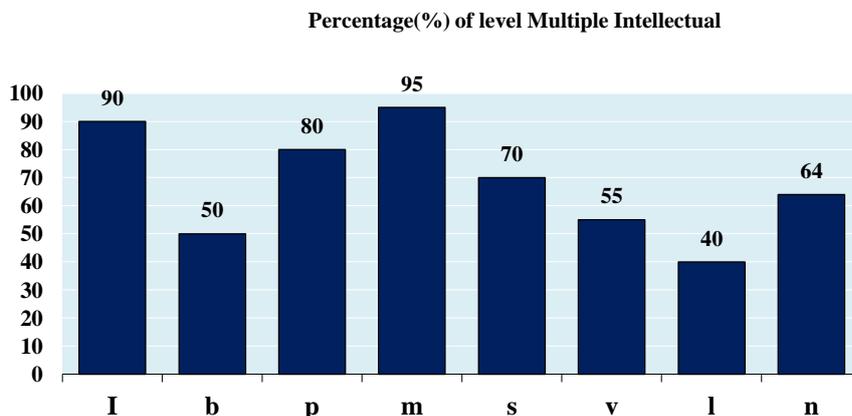


Figure 3: Profile (profile) is a graph showing the potential of multiple intelligences Ms. Cherdsuk, K.

The ultimate goal of multiple intelligences theory is to increase student understanding of subject matter. Classroom activities often activate more than one of the multiple intelligences.

For example, consider the following classroom activities:

- Writing a report or essay—activates linguistic intelligence.
- Composing a song—promotes musical and linguistic intelligences.
- Group discussion—activates linguistic and interpersonal intelligences.
- Journal writing—enhances intrapersonal and linguistic intelligences.
- Making a video—stimulates logical-mathematical, musical, linguistic, interpersonal, and spatial intelligences.
- Choreography—integrates musical, linguistic, and interpersonal intelligences
- Composing a song—serves musical and linguistic intelligences.
- Communicating with experts online—engages linguistic and interpersonal Intelligences.
- Making graphs—activates logical-mathematical and spatial intelligences.
- Putting on a play—enhances musical, linguistic, interpersonal, and spatial Intelligences.
- Designing posters—integrates linguistic and spatial intelligences.
- Constructing timelines—promotes logical-mathematical and spatial intelligences.
- Hands-on experimentation—nurtures kinesthetic and logical-mathematical intelligences.

(Educational Broadcasting Corporation, 2004a)

### Works Cited

- Corno, L., Cronback, L. J., Kupermintz, H., Lohman, D. F., Mandinach, E. B., Porteus, A. W., & Talbert, J. (2002). *Remaking the concept of aptitude: Extending the legacy of Richard E Snow*. Mahwah, NJ: Erlbaum.
- Educational Broadcasting Corporation. (2004a). *Tapping into multiple intelligences: Exploration*. New York, NY: Author.
- Gardner, H. (1983). *Frames of Mind: The theory of multiple intelligences*. New York: Basic Books.
- Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st century*. New York: Basic Books.
- Kanchanawasi, S. et al. (1994). *Selection of appropriate statistics for research*. Bangkok: Chulalongkorn University.
- Nelson, K. (1998). *Developing students' multiple intelligences*. New York: Scholastic.
- Pornkul, C. (2011). *Teaching thought processes: Theory and application*. Bangkok: Chulalongkorn University Press.
- Sinhuwong, K. (2007). *Teaching for the Development of Thinking and Learning*. Khon Kaen: Khon Kaen University Printing House.
- Siriratrekha, T. (2017, November). *The Theory of Multiple Intelligences*. *Happy Home Clinic*. <http://www.happyhomeclinic.com/a01-multiple-intelligence.htm>.
- Sternberg, R. J. (1998). *Applying the triarchic theory of human intelligence in the classroom*. In R. J. Sternberg & W. M. Williams (Eds.), *Intelligence, instruction, and assessment*. (pp. 167–181). Mahwah, NJ: Erlbaum
- Thumthong, B. (2010). *Curriculum Development*. Edition 2. Bangkok: Chulalongkorn University.
- Tangpakorn, B. (2020). Enhancement of Chinese Language Learning Management Competencies by Integrating Multi-Wisdom Models for Chinese Teachers in Schools Under the Lampang Primary Educational Service Area Office Area 1. *Education Journal Chulalongkorn University*, 48(2), 129-146.