

# A Thai 7<sup>th</sup> Grade Needs Assessment Analysis for Creativity Skills Curriculum Development

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**Abstract** - The researchers undertook a curriculum development needs assessment analysis of Thai 7<sup>th</sup> grade students' creativity abilities using multistage random sampling to select 476 Bangkok area Thai teachers and administrators. Analysis was conducted from the needs assessment questionnaire, from which data was obtained concerning curriculum development and the techniques necessary for strengthening 7<sup>th</sup> grade student creative skills. The modified priority needs index (PNI(Modified)) formula was used to set the order of needs. SPSS for Windows 21 was used to analyse means of frequency, percent, mean, and standard deviation. Results revealed that school administrators and teachers have a need to develop creative thinking curriculum. Of the 7 aspects assessed using the PNI(Modified) formula, in rank of importance, students (aspect 7) were first, course curriculum ranked second, multi-media and teaching innovation ranked third (aspect 5), curriculum learning activities ranked fourth (aspect 3), teachers were fifth (aspect 4), measurement and evaluation was sixth (aspect 6), and finally, and seventh, was curriculum documentation (aspect 1).

**Keywords** - Creative Thinking, Curriculum Enhancement, Thailand 4.0

## I. INTRODUCTION

The changes that have taken place in Thailand today are an important part of the advancement of information technology and communication without borders, which has resulted in new challenges. In 2017, 400,000 bachelor's degree graduates, and 140,000 vocational education graduates will be entering the Thai workforce [1], with the question being asked now is, "how able and ready are they to compete in a knowledge-based, digital economy under Thailand 4.0?".

Thailand 4.0 is an economic model based on creativity, innovation, new technology, and high-level services [2]. To develop a country within this global context, it must be driven by innovation and creativity, along with the skills necessary for workers within a 21<sup>st</sup> Century environment [3-5] Transforming however to the challenges of the 21<sup>st</sup> century dynamics is therefore based on high quality education which meets the goals of Thailand's 12<sup>th</sup> National Economic and Social Development Plan (2017-2021), while focusing on the development of critical thinking skills, as well as creativity [2, 6].

Under the Thai government's 20-Year National Strategy intended to help the country achieve sustainable development, a "6-6-4

plan” has been outline which consists of six target areas, six primary strategies, and four support strategies [2, 7]. Furthermore, ‘The Basic Education Core Curriculum B.E. 2551 (A.D. 2008)’, stipulates the principle of educational management, in which the learning process is aims to cultivate ‘thinking capacity’ [8].

### **A. Statement of the Problem**

There continues to be a precipitous drop in testing scores of Thai students [9], contributing to a significant shortfall in skills required for a 21<sup>st</sup> Century workforce, and a knowledge-based, digital economy under the Thailand 4.0 initiative [3, 10-12]. This crisis therefore requires a needs assessment at the secondary school level to determine why and how teachers and administrators can better develop a process to overcome serious obstacles to Thailand’s future growth and security. The data to be gathered in this study may help provide education leaders with information relating to how they may address or mitigate factors contributing to the current situation.

## **II. LITERATURE REVIEW**

### **A. Needs Assessment**

Kaufman, Rojas, and Mayer stated that a needs assessment is a process used to identify needs by prioritizing essential needs [13]. It is a systematic process for determining and addressing needs, or “gaps” between current conditions and desired conditions or “wants” [11, 13]. The process of needs identification includes the following elements:

1. Pre-assessment preparation is stated to be twofold: to ascertain existing capabilities and to determine the gap that exists, if any, between the current state and the desired end state [14].

2. Evaluation consists of data collection, data analysis, and essential needs prioritization [15].

3. After the evaluation, the results are applied. Essential information resources come from 7 aspects, which include: curriculum documentation (aspect 1), course curriculum

- (aspect 2), curriculum learning activities (aspect 3), teachers (aspect 4), multi-media and teaching innovation (aspect 5), measurement and evaluation (aspect 6), and students (aspect 7).

### **B. Curriculum Development and Supplementary Curriculum**

Scholars in the field of curriculum studies such as Taba stated curriculum development should be ‘a plan for learning’ [16], while Sayler, Alexander, and Lewis said it should be a plan for providing sets of learning opportunities for ‘persons to be educated’ [17].

### **C. Curriculum Evaluation**

One of the earliest curriculum evaluation models, which continues to influence many assessment projects, was that proposed by Tyler [18]. From this, the researchers applied Tyler’s objectives-centered model, which is the process of determining the attainment of the intended goals in the curriculum.

Torrance had a difficult time defining ‘creativity’, but suggested a common theme throughout all discussions was ‘newness’ [19]. Guilford on the other hand referred to creativity as ‘productive thinking’, which was an aspect of intelligence [20].

## **III. METHODS**

### **A. Research Format**

The research used a research methodology to assess the needs for the development of creative thinking curriculums of Thai 7<sup>th</sup> grade secondary school students.

### **B. Population and Sample**

Multistage random sampling was used to obtain the 476 school administrators and teachers who were working under the administration of Thailand’s Office of Secondary Education in the Bangkok metropolitan area. The number chosen represented use of Yamane’s formula [21], while allowing for a 4.5% error.

$$n = N / [1 + N (e)2]$$

Where n is the sample size, N is the population size, and e is the level of precision.

**C. Variables Studied**

The variables studied are the requirements needed to develop programs to enhance the creative skills of Thai 7<sup>th</sup> grade secondary school students.

**D. Data-Collection Tools**

The instrument used to collect data was a needs assessment questionnaire used for developing a creative thinking curriculum to enhance the creative skills of Thai 7<sup>th</sup> grade secondary school students.

**E. Index of Item Objective Congruence (IOC)**

Research validity verification was accomplished by various methods, including the use of the Index of Item Objective Congruence (IOC) [22]. The IOC is used in conjunction with a group of experts who are tasked with evaluating the content of the survey's items. By definition, an IOC score greater or equal to 0.60 is considered acceptable. From the 5 experts, IOC scores ranged between 0.97 - 0.98.

**F. Data Collection**

The researchers collected the data in person and by mail by sending a blank envelope with a postage stamp to each educational staff member to return. From the evaluation forms returned, 476 copies were selected. Data were analyzed using SPSS for Windows 21 computer program.

**G. Data Analysis**

Analysis was conducted from the respondent's general data, descriptive statistics (frequency and percentage methods), and the needs assessment for curriculum development questionnaire which were subsequently ranked by use of the modified priority needs index (PNI<sub>(modified)</sub>) [23]. To get standard scores, the needs were assessed by finding the differential value between desired outcome (I) and actual results (D), by determining the needs at the real level. The formula for the calculation is as follows:

$$PNIModified = (I - D) / D$$

PNI = priority needs index.  
 I = mean (Desired outcome)

D = mean (Actual results)

**IV. RESULTS**

**A. Respondent's Information**

The results of the data analysis are summarized in Table I. From the 476 respondents, 430 were classified as teachers (90.3%), which taught in 307 large schools with over 1,500 students (64.5%). Education level ratios were as anticipated, with 358 (75.21%) having a bachelor's degree, with the remaining 118 (24.79%) having a graduate degree. Work experience responses indicated 257 (54%) individuals had over 5 years' experience, and the remaining 219 (46%), having less than five years' experience.

**TABLE I  
RESPONDENT'S INFORMATION**

Respondent's Information	Number (n)	%
<b>1. Position</b>		
School administrators	46	9.70
Teachers	430	90.30
<b>Total</b>	<b>476</b>	<b>100.00</b>
<b>2. School size</b>		
Schools > 1,500 students	307	64.50
Schools < 1,500 students	169	35.50
<b>Total</b>	<b>476</b>	<b>100.00</b>
<b>3. Education</b>		
Bachelor Degree	358	75.21
Graduate Degree	118	24.79
<b>Total</b>	<b>476</b>	<b>100.00</b>
<b>4. Work experience (service)</b>		
More than 5 years	257	54.00
Less than 5 years	219	46.00
<b>Total</b>	<b>476</b>	<b>100.00</b>
<b>5. Subjects taught</b>		
Thai Language	64	13.40
Science	74	15.50
Health and Physical Ed.	29	6.30
Math	72	15.10
Art	42	8.80
Foreign language	65	13.70
Career and Technology	47	9.90
Social studies & religion	59	12.40
Other	24	5.00
<b>Total</b>	<b>476</b>	<b>100.00</b>

**B. Student Creativity Needs Assessment Development**

Results showed in Fig. 1 and Fig. 2 that the most important aspect of the student's needs assessment was students (aspect 7 with a

$PNI_{(Modified)} = 0.455$ ), and course curriculum (aspect 2 with a  $PNI_{(Modified)} = 0.433$ ). The least important was curriculum documentation (aspect 1 with a  $PNI_{(Modified)} = 0.367$ ), respectively.

learning time ( $PNI_{(Modified)} = 0.542$ ), with the least important component being item 1, curriculum content is up-to-date ( $PNI_{(Modified)} = 0.393$ ).

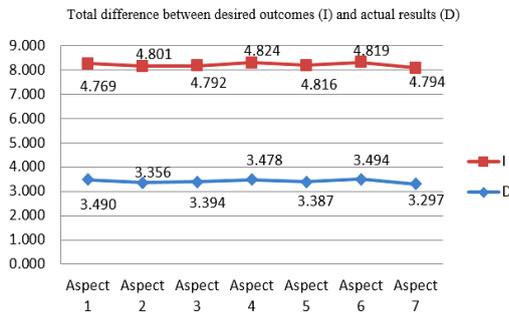


Fig. 1 Desired Outcome (I) Actual Results (D)

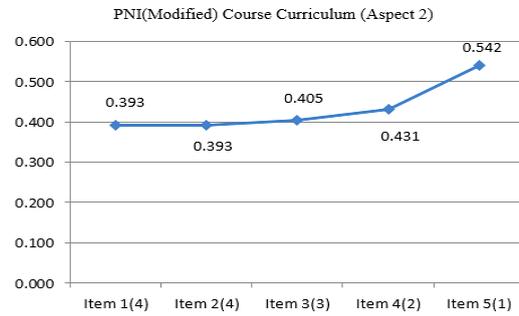


Fig. 4 Course Curriculum (Aspect 2)

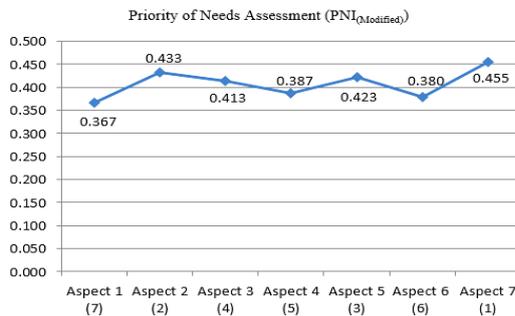


Fig. 2 Priority of Needs Assessment (PNI(Modified))

### C. Students (Aspect 7)

Fig. 3 shows, Students' (Aspect 7) item 4 as the most important requirement with students having the ability for seeing more detail than most and thinking 'out-side the box' ( $PNI_{(Modified)} = 0.486$ ), with the least important component being item 6, student has limited needs for learning more than what is required ( $PNI_{(Modified)} = 0.423$ ).

Fig. 5 shows, Multi-Media and Teaching Innovation's (Aspect 5) item 8 as the most important requirement to be monitoring and monitoring systems, evaluation of media use and learning resources ( $PNI_{(Modified)} = 0.504$ ), with the least important component being 6, learning resources that builds creative skills ( $PNI_{(Modified)} = 0.386$ ).

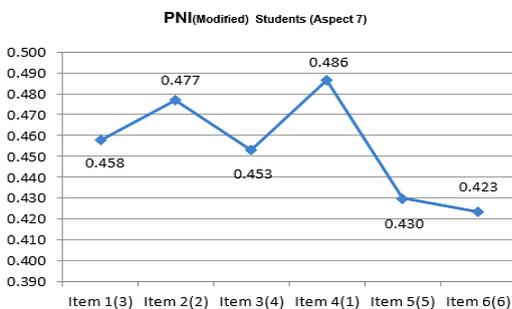


Fig. 3 Students (Aspect 7)

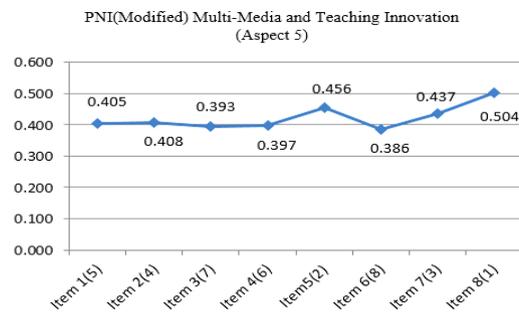


Fig. 5 Multi-Media and Teaching Innovation (Aspect 5)

Fig. 4 shows, Course Curriculum (Aspect 2) item 5 as the most important requirement with curriculum content being appropriate for

Fig. 6 shows, Curriculum Learning Activities' (Aspect 3) item 7 as the most important requirement being learning activity has a reasonable time ( $PNI_{(Modified)} = 0.504$ ), with the least important component being item 5, learning activities are integrated and the student focus is important ( $PNI_{(Modified)} = 0.361$ ).

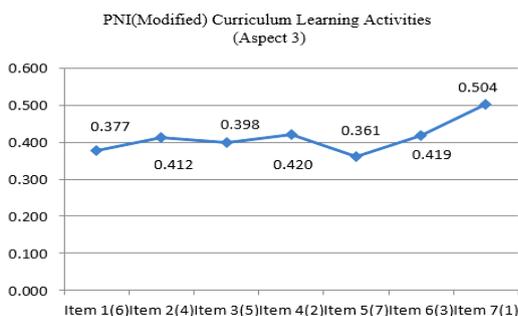


Fig. 6 Curriculum Learning Activities (Aspect 3)

Fig. 7 shows, Teachers’ (Aspect 4) item 2 as the most important requirement which is research and development for continuous learning ( $PNI_{(Modified)}=0.437$ ), with the least important component being item 5, the teacher measures and evaluates in a flexible way ( $PNI_{(Modified)}=0.355$ ).

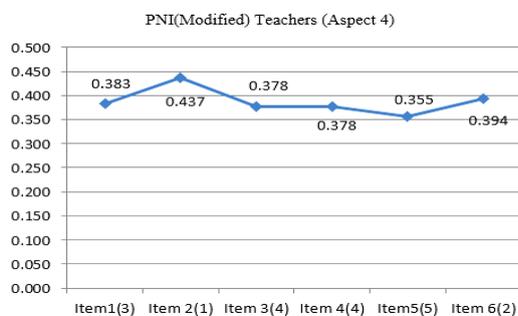


Fig. 7 Teachers (Aspect 4)

Fig. 8 shows, Measurement and Evaluation’s (Aspect 6) item 6 as the most important requirement as there is continuous monitoring and supervision, measurement and evaluation ( $PNI_{(Modified)} = 0.443$ ), with the least important component being item 2, the measurement and evaluation corresponds to the flexibility ( $PNI_{(Modified)} = 0.348$ ).

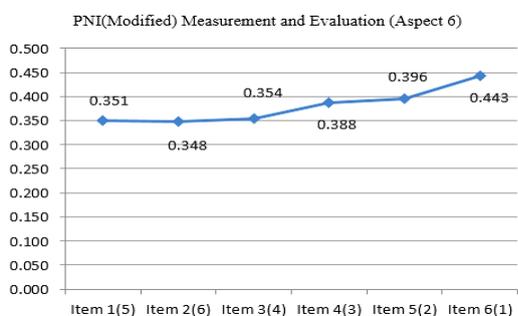


Fig. 8 Measurement and Evaluation (Aspect 6)

Fig. 9 shows, Curriculum Documentation’s (Aspect 1) item 5 as the most important requirement, as the course is continually evolving ( $PNI_{(Modified)}=0.425$ ), with the least important component being item 1, the course is intended to enhance creative thinking skills ( $PNI_{(Modified)}=0.321$ ).

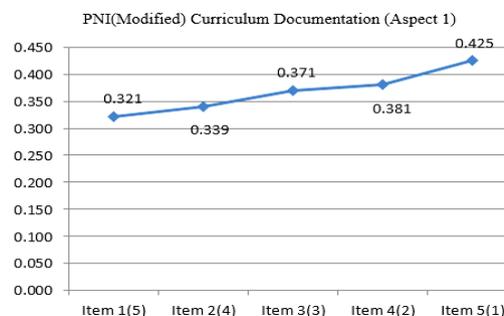


Fig. 9 Curriculum Documentation (Aspect 1)

## V. DISCUSSION

Needs assessment was defined by Bell (1974) as the process of identifying and analysing needs, and placing priorities among them for the purpose of decision making. Furthermore, the issues that institutions should address include an institution’s goals and priorities, performance deficiencies of the institution, what is the institution doing wrong or right, and what are the desired competencies and emphasis for students.

This is consistent with the results of this study which revealed that administrators and teachers need to develop creative thinking curriculum of Thai secondary school students ( $PNI_{(Modified)} = 0.408$ ). This is because school administrators and teachers are expected to improve current conditions, with specific improvements expected in curriculum documentation, course content, and curriculum learning activities [25]. Furthermore, improvements are expected in teacher media and teaching innovation, measurement, and evaluation. Therefore, assessing student needs is important before undertaking any research or development work.

From the study’s results, it was determined that Thai school administrators and teachers had a significant need to develop curriculum to

build creative skills of high school students. This may be due to the fact that most high school students in the first year of the year have a relatively low creativity level, which is reflected in national and international level examinations [9].

Therefore, future requirements are as follows:

#### **A. Communicate Clearly**

- Articulate thoughts and ideas effectively using oral, written, and nonverbal communication skills in a variety of forms and contexts.
- Listen effectively to decipher meaning, including knowledge, values, attitudes, and intentions.
- Use communication for a variety of purposes (inform, instruct, motivate, and persuade).
- Utilize multiple media and technologies, and know how to judge their effectiveness a priori as well as assess their impact.
- Communicate effectively in diverse environments (including multi-lingual).

#### **B. Collaborate with Others**

- Demonstrate the ability to work effectively and respectfully with diverse teams.
- Exercise flexibility and willingness to be helpful in making necessary compromises to accomplish a common goal.
- Assume shared responsibility for collaborative work, and value individual contributions made by each team member [5].

From the study's results, it was determined that Thai school administrators and teachers had a minimal need to develop course documentation curriculum to build creative skills of high school students (PNI(Modified)=0.368). This may be because the curriculum is constantly evolving, is easy to implement, easy to understand, and it is appropriate for the learner's context and aims to build clear

creative skills but at a relatively low level.

## **VI. CONCLUSION**

Davis and Rimm indicated that creative thinking can be learned and developed over time, and courses can develop processes and skills [26]. The curriculum is developed from the basic level of education and all levels, with the supplementary curriculum being important as well. In summary, there are no learner failures, only program failures.

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**(Arranged in the order of citation in the same fashion as the case of Footnotes.)**

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