

การวิเคราะห์ความต้องการจำเป็นของนักเรียนโรงเรียนปัญญาวรคุณที่มีต่อบทเรียน STAR STEMS ที่ 1 เรื่อง ‘A CHEMICAL FREE LIFE’

PWS Students’ Need Analysis for a Lesson Design in STAR STEMS “A CHEMICAL FREE LIFE”

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บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อที่จะพินิจพิเคราะห์ความจำเป็นที่ต้องเรียนภาษาอังกฤษ ความต้องการเรียนรู้ในสิ่งที่ไม่รู้ หรือมีความสามารถน้อย และความต้องการเพิ่มเติมของนักเรียนโรงเรียนปัญญาวรคุณ ชั้นมัธยมศึกษาปีที่ 6 กับการออกแบบบทเรียนใหม่ เพื่อตอบสนองความต้องการจำเป็นและความสนใจของนักเรียนในด้านของการเรียนรู้ที่อิงมาตรฐานการเรียนรู้

กลุ่มตัวอย่างของการวิจัยครั้งนี้ คือ นักเรียนชั้นมัธยมศึกษาปีที่ 6 ห้อง ม. 6/1, 6/4 และ 6/7 จำนวน 56 คน โรงเรียนปัญญาวรคุณ ภาคเรียนที่ 1 ปีการศึกษา 2560 เครื่องมือวิจัยเป็นแบบสอบถามเกี่ยวกับแบบประเมินแผนการเรียนรู้ STAR STEMS แผนการเรียนรู้ที่ 1 เรื่อง ‘A Chemical Free Life’ ข้อมูลของแบบสอบถามนี้ได้นำมาจัดกลุ่มและจำแนกตามการวิเคราะห์ความต้องการจำเป็นควบคู่ไปกับการเรียนรู้ที่อิงมาตรฐานการเรียนรู้เพื่อการออกแบบบทเรียนใหม่ของ STAR STEMS

ผลการวิจัย พบว่า เพื่อที่จะปรับปรุงบทเรียนและเพื่อที่จะตอบสนองความต้องการจำเป็นและความสนใจของนักเรียน นักเรียนโรงเรียนปัญญาวรคุณ ห้อง ม. 6/1 ชอบบทสนทนา ในขณะที่นักเรียนโรงเรียนปัญญาวรคุณ ห้อง ม. 6/4 ต้องการทักษะการอ่าน อย่างไรก็ตามนักเรียนโรงเรียนปัญญาวรคุณ ห้อง ม. 6/7 อยากทำได้ดีในการสอบรับนักเรียนเข้ามหาวิทยาลัย ในด้านการเรียนรู้ที่อิงมาตรฐานการเรียนรู้จากการวิเคราะห์ความต้องการจำเป็นของนักเรียน ต 1.1 ม. 4-6/3, ต 1.2 ม. 4-6/1, ต 1.2 ม. 4-6/4, ต 1.2 ม. 4-6/5, ต 2.1 ม. 4-6/1, และ ต 4.2 ม. 4-6/1 นำมาใช้สำหรับการออกแบบบทเรียนใหม่ของนักเรียนโรงเรียนปัญญาวรคุณ ห้อง ม. 6/1 นอกจากนี้ ต 1.1 ม. 4-6/2, ต 1.1 ม. 4-6/3, และ ต 1.1 ม. 4-6/4 นำมาใช้สำหรับการออกแบบบทเรียนใหม่ของนักเรียนโรงเรียนปัญญาวรคุณ ห้อง ม. 6/4 ท้ายที่สุด ต 1.1 ม. 4-6/4, ต 1.2 ม. 4-6/1, ต 2.2 ม. 4-6/1, และ ต 2.2 ม. 4-

6/2 นำมาใช้สำหรับการออกแบบบทเรียนใหม่ของนักเรียนโรงเรียนปัญญาวรคุณ ห้อง ม. 6/7

คำสำคัญ: STAR STEMS การวิเคราะห์ความต้องการจำเป็น อิงมาตรฐานการเรียนรู้

ABSTRACT

The purposes of this research were to scrutinize their needs, lacks, and subjectively wants of Matthayomsuksa 6 students at Panyaworakun School with a new design of the lesson to serve their needs and interests in terms of standard-based instruction.

The subjects of this study were 56 high-school students of Matthayomsuksa 6/1, 6/4, and 6/7 at Panyaworakun School in the academic year 2017, semester 1. The research instrument was a questionnaire regarding STAR STEM Evaluation Form Learning Plan 1 “A Chemical Free Life.” The data of the questionnaire were grouped and classified with needs analysis together with standard-based instruction for a new lesson design in STAR STEMS.

The research results revealed that to meet the students’ needs and interests, the Matthayomsuksa 6/1 PWS students like conversations while the Matthayomsuksa 6/4 students need reading skill. However, the Matthayomsuksa 6/7 PWS students would like to do well in the admission exams. In terms of standard-based instruction interpreted from needs analysis, F 1.1 M. 4-6/3, F 1.2 M. 4-6/1, F 1.2 M. 4-6/4, F 1.2 M. 4-6/5, F 2.1 M. 4-6/1, and F 4.2 M. 4-6/1 were employed for Matthayomsuksa 6/1 PWS students’ new lesson design. Next, F 1.1

M. 4-6/2, F 1.1 M. 4-6/3, and F 1.1 M. 4-6/4 were used for Matthayomsuksa 6/4 PWS students' new lesson design. At last, F 1.1 M. 4-6/4, F 1.2 M. 4-6/1, F 2.2 M. 4-6/1, and F 2.2 M. 4-6/2 were utilized for Matthayomsuksa 6/7 PWS students' new lesson design.

Keywords: STAR STEMS, Needs Analysis, Standard - based

Introduction

The 21st century is the world of globalization with the evolution of information technology. Teaching in the 19th century is not appropriate and enough for students in this new world. The problems nowadays are that students work without creative thinking skills and they don't have disciplines and responsibilities. Also, they don't know Thainess and they are not proud of being Thai. These failures are from the unsustainability of 12 years at school since students cannot think and do by themselves and their wisdom is not used and applied. To solve these Thai students' problems, STAR STEMS (Student Teacher Academics Revolution STEMS) is implemented. "STEMS" in STAR STEMS is associated with the third learning area of foreign languages which is language and relationship with other learning areas: use of foreign languages to link knowledge with other learning areas, forming the basis for further development, seeking knowledge and broadening learners' world views (The Basic Education Core Curriculum, 2008, p. 221) and "STEMS" in STAR STEMS consists of Scientific thinking, Thai-Technology, English-Engineering, Moral-Mathematics, and Sociogeology. Panyaworakun School is one of the schools which takes the implementation of STAR STEMS from Matthayomsuksa 1 to 6. For Matthayomsuksa 6, the topic of the theme-based unit is "School without Chemicals" and the parallel integrated instruction is employed. In Basic English (E33101), concerning standard-based instruction, the material of lesson 1 "A Chemical Free Life" is made from F 1.1 M. 4-6/4 : identify the main idea,

analyse the essence, interpret and express opinions from listening to and reading feature articles and entertainment articles, as well as provide justifications and examples for illustration (The Basic Education Core Curriculum, 2008, p. 263). With standard-based instruction, the sub-topic concept of lesson 1 "A Chemical Free Life" is to read for understanding about living a life without chemicals and to guess the academic words from reading the contexts on the environment and E (English - Engineering); therefore, is to know some English academic vocabulary from reading the contexts. To develop further, lesson 1 of the sub-topic begins with scrutinizing for needs and interests of PWS (Panyaworakun School) students after the lesson 1 is taught so that the lesson can serve the needs and interests of the target learners for a further lesson design in STAR STEMS of other sub-topics with standard-based instruction.

Literature Review

1. STAR STEMS

"STAR STEMS" is a learning process which integrates with every learning area together to systematically create analytic and synthetic thinking skills, to know how to use English skills, to cultivate for good people who have disciplines, morals, responsibilities, and to be proud of the nation along with Thainess and social circumstances by way of Situation-Based Learning: SBL (Committee Steers National Education Reform, 2017: 19). The learning process mentioned above is an holistic aspect called STAR STEMS (Student, Teacher, Academic, Revolution and Scientific Thinking, Thai-Technology, English-Engineering, Moral - Mathematics, Sociogeology) (Committee Steers National Education Reform, 2017: 21). In detail, the learning process of scientific thinking is critical thinking and mental model; Thai-Technology is creativity, culture, and internal motivations, English-Engineering is reading, writing, computing, career, and communication; Moral-Mathematics is arithmetics, computing, and compassion; Sociogeology is cross-cultural study,

internal motivation, and social learning (Committee Steers National Education Reform, 2017: 42). In this study, only English-Engineering in one learning process of reading is selected for lesson 1 “A Chemical Free Life.” The learning concept of the lesson 1 is to read for understanding about living a life without chemicals and to guess the academic words from reading the contexts on the environment.

2. Need Analysis

Aside from the teacher’s notions and the sponsor’s requirements, the learners’ needs should be taken into consideration for designing an effective lesson. Therefore, Matthayomsuksa 6 students at Panyaworakun School which is the target setting write suggestions for getting the actual needs. Need analysis is performed to scrutinize needs, lacks, and subjectively wants so as to clearly understand what the learners’ needs are in the target situation. Then, the necessary data from needs analysis are for a lesson design in STAR STEMS.

According to Tom Hutchinson and Alan Waters (Hutchinson, T., & Waters, A. 1995: 54-58), target needs can be categorized as necessities, lacks and wants.

2.1 Necessities

Necessities are determined by the target situation, so necessities are what the learners need to know in order to function effectively in the target situation.

2.2 Lacks

To identify necessities alone is not enough, the lesson designer needs to know what the learners lacks. The target proficiency needs to be matched against the existing proficiency of the learners. The gap between the two can be referred to as the learner’s lack.

2.3 Wants

‘Wants’ display the learner viewpoints on their needs. The awareness of needs is what characterized ESP. But awareness is a matter of perception, and perception may vary according to

one’s standpoint. Learners may well have the idea of the ‘necessities’ of the target situation: they will certainly have a view as to their ‘lacks’. But it is quite possible that the learners’ views (Subjective Wants) will conflict with the perceptions of other interested parties: course designers, sponsors, and teachers (Objective Wants).

2.4 Objective Wants

Designing a lesson in STAR STEMS is new for Panyaworakun School. In the lesson designer’s viewpoints, the students are studying not only Basic English (E33101), but also Reading and Writing English 5 (E33201); therefore, they need to be improved in reading and vocabulary which can complement reading. Based on the students in these courses, the lesson 1 in STAR STEMS starts with academic vocabulary which is a basic part of English-Engineering and the lesson is also a starter for needs assessment so that a further lesson design in STAR STEMS can serve the needs and interests of Matthayomsuksa 6 students at Panyaworakun School.

2.3 Standard-based Instruction

Panyaworakun School provides the school curriculum by means of Basic Education Core Curriculum B.E. 2551 (A.D. 2008). For standard-based instruction, the curriculum of Panyaworakun School is studied and the school curriculum of English subjects for Matthayomsuksa6 (Grade 12) is indicated as follows.

Strand 1: Language for Communication

Standard F1.1: Understanding of and capacity to interpret what has been heard and read from various types of media, and ability to express opinions with proper reasoning

1. Observe instructions in manuals for various types of work, clarifications, explanations and descriptions heard and read.

2. Accurately read aloud texts, news, advertisements, poems and skits by observing the principles of reading.

3. Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read.

4. Identify the main idea, analyse the essence, interpret and express opinions from listening to and reading feature articles and entertainment articles, as well as provide justifications and examples for illustration.

Standard F1.2: Endowment with language communication skills for exchange of data and information; efficient expression of feelings and opinions

1. Converse and write to exchange data about themselves and various matters around them, experiences, situations, news/incidents and issues of interest to society, and communicate the data continuously and appropriately.

2. Choose and use requests and give instructions, clarifications and explanations fluently.

3. Speak and write to express needs and offer, accept and refuse to give help in simulated or real situations.

4. Speak and write appropriately to ask for and give data, describe, explain, compare and express opinions about matters/ issues/news and situations heard and read.

5. Speak and write to describe their own feelings and opinions about various matters, activities, experiences and news/incidents with proper reasoning.

Standard F1.3: Ability to present data, information, concepts and views about various matters through speaking and writing

1. Speak and write to present data themselves/ experiences, news/incidents, matters and various issues of interest to society.

2. Speak and write to summarise the main idea/theme identified from analysis of matters, activities, news, incidents and situations in accordance with their interests.

3. Speak and write to express opinions about activities, experiences and incidents in the local area, society and the world, as well as provide justifications and examples for illustration.

Strand 2: Language and Culture

Standard F2.1: Appreciation of the relationship between language and culture of native speakers and capacity for use of language appropriate to occasions and places

1. Choose the language, tone of voice, gestures and manners appropriate to various persons, occasions and places by observing social manners and culture of native speakers.

2. Explain/discuss the lifestyles, thoughts, beliefs and origins of customs and traditions of native speakers.

3. Participate in, give advice and organize language and cultural activities appropriately.

Standard F2.2: Appreciation of similarities and differences between language and culture of native and Thai speakers, and capacity for accurate and appropriate use of language

1. Explain/compare differences between the structures of sentences, texts, idioms, sayings, proverbs and poems in foreign languages and Thai language.

2. Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately.

Strand 3: Language and Relationship with Other Learning Areas

Standard F3.1: Usage of foreign languages to link knowledge with other learning areas, as foundation for further development and to seek knowledge and widen one's world view

1. Research/search for, make records, summarise and express opinions about the data related to other learning areas, and present them through speaking and writing.

Strand 4: Language and Relationship with Community and the World

Standard F4.1: Ability to use foreign languages in various situations in school, community and society

1. Use language for communication in real situations/simulated situations in the classroom, school, community and society.

Standard F4.2: Usage of foreign languages as basic tools for further education, livelihood and exchange of learning with the world community

1. Use foreign languages in conducting research, collecting, analyzing and summarizing knowledge/various data from the media and different learning sources for further education and livelihood.

2. Disseminate/convey to the public data and news about the school, community and the local area/the nation in foreign languages.

Lesson 1 in STAR STEMs “A Chemical Free Life” applies F 1.1 M. 4-6/4 as a basic beginning for conducting this research.

Objectives

This study was carried out: To scrutinize needs, lacks, and subjectively wants of Matthayomsuksa 6 students at Panyaworakun School with the improvement of a lesson design in STAR STEMs “A Chemical Free Life” to serve their needs and interests in terms of standard-based instruction.

Methods

1. Subjects

The subject of this study were 56 high-school students of Matthayomsuksa 6/1, 6/4, and 6/7 at Panyaworakun School in the academic year 2017, semester 1.

2. Materials

The instrument employed to collect the data from this research was a questionnaire;

“STAR STEMs Evaluation Form Learning Plan 1 ‘A Chemical Free Life’.” It consists of three parts as follows.

Part I The first part was set to ask general information on subject code, course, the respondents’ class and room, their study program, their teacher, and subject area.

Part II The second part was a new developed checklist adapted from the study of several checklists, especially Bangkok Christian College’s, in eight aspects: expected learning outcomes, learning objectives, learning plan integration, learning activities, teaching methodology, learning resources, learning media, and measurement and evaluation. The respondents’ written suggestions of the checklist of learning plan 1 “A Chemical Free Life” were qualitatively analyzed in terms of necessities, lacks, and subjectively wants to serve their needs and interests for a further lesson design in STAR STEMs after the lesson 1 “A Chemical Free Life” was employed and investigated.

3. Procedures

Need analysis was conducted through a questionnaire; “STAR STEMs Evaluation Form Learning Plan 1 ‘A Chemical Free Life’” qualitatively analyzed to meet the target students’ necessities, lacks, and subjectively wants for further lesson development. After that, the result from the needs analysis was considered for creating the effective STAR STEMs lesson that responses the students’ needs.

4. Data Analysis

The analysis of data is as follows:

The data of the questionnaire demonstrating the students’ written suggestions were grouped and classified with regard to their needs consisting of the necessities, lacks, and subjectively wants in order for developing a further STAR STEMs lesson with standard-based instruction.

Results

1. Needs Analysis of Matthayomsuksa 6/1

1.1 Necessities

The skill the Matthayomsuksa 6/1 PWS students need the most for Learning Plan 1 “A Chemical Free Life” is speaking for communication. Writing shouldn’t be emphasized and reading is the minor thing. In terms of vocabulary, words should be learned in conversations and learning words should have more fun with word search or crossword puzzle. For necessities, Matthayomsuksa 6/1 PWS students’ necessities according with F 1.2 M. 4-6/1: Converse and write to exchange data about themselves and various matters around them, experiences, situations, news/incidents and issues of interest to society, and communicate the data continuously and appropriately, and F 1.2 M. 4-6/5: Speak and write to describe their own feelings and opinions about various matters, activities, experiences and news/incidents with proper reasoning.

1.2 Lacks

What the Matthayomsuksa 6/1 PWS students lack is vocabulary used in conversations. They would also like to be able to read new knowledge for speaking. They need to be improved in speaking skills which they lack. What they lack is in accordance with F 1.2 M. 4-6/4: Speak and write appropriately to ask for and give data, describe, explain, compare and express opinions about matters/ issues/news and situations heard and read, and F 2.1 M. 4-6/1: Choose the language, tone of voice, gestures and manners appropriate to various persons, occasions and places by observing social manners and culture of native speakers.

1.3 Subjective Wants

Matthayomsuksa 6/1 PWS students don’t need writing while reading, speaking, and playing vocabulary games in conversations are what they prefer. They like a variety of learning activities.

They want to have more handouts and worksheets so that they will be able to understand the contents well. Besides handouts and worksheets, mobile devices are necessary for them to learn more. More handouts and worksheets concur with F 1.1 M. 4-6/3: Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read. Vocabulary activities for conversations agree to F 2.1 M. 4-6/1: Choose the language, tone of voice, gestures and manners appropriate to various persons, occasions and places by observing social manners and culture of native speakers. Learning from mobile devices is consistent with F 4.2 M. 4-6/1: Use foreign languages in conducting research, collecting, analysing and summarising knowledge/ various data from the media and different learning sources for further education and livelihood.

2. Need Analysis of Matthayomsuksa 6/4

2.1 Necessities

Reading skill is the most necessary for Matthayomsuksa 6/4 PWS students. They need a variety of reading, for instance, reading newspapers should be included in Learning Plan 1 “A Chemical Free Life.” Reading a lot of things goes together with F 1.1 M. 4-6/2: Accurately read aloud texts, news, advertisements, poems and skits by observing the principles of reading, and F 1.1 M. 4-6/4: Identify the main idea, analyse the essence, interpret and express opinions from listening to and reading feature articles and entertainment articles, as well as provide justifications and examples for illustration.

2.2 Lacks

Vocabulary alone is not enough and doesn’t help Matthayomsuksa 6/4PWS students read well and more. Worksheets and handouts mostly have only vocabulary; therefore, they lack a variety of reading. A variety of reading matches with F 1.1 M. 4-6/3: Explain and write sentences

and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read.

2.3 Subjective Wants

Matthayomsuksa 6/4 PWS students want more teaching methodologies for reading especially they like to read more printed materials and there should be a variety of materials for them to read. They would like to read something more interesting and to do a lot of exercises so that they will be able to review the things that they have read. They want to be accurate in reading and doing the exercises. Their subjective wants go with F 1.1 M. 4-6/3: Explain and write sentences and texts related to various forms of non-text information, as well as specify and write various forms of non-text information related to sentences and texts heard or read, and F 1.1 M. 4-6/4: Identify the main idea, analyse the essence, interpret and express opinions from listening to and reading feature articles and entertainment articles, as well as provide justifications and examples for illustration.

3. Need Analysis of Matthayomsuksa 6/7

3.1 Necessities

The Matthayomsuksa 6/7 PWS students need reading strategies and conversations for the admission exams. Reading techniques are necessary for them to cope with reading parts in O-NET English Exam and GAT English test. Additionally, they need to learn how to use the language for handling the dialogues in conversation parts of the admission exams; therefore, conversational skills are the things they need the most. In the exams, reading parts are in line with F 1.1 M. 4-6/4: Identify the main idea, analyse the essence, interpret and express opinions from listening to and reading feature articles and entertainment articles, as well as provide justifications and examples for illustration while conversation parts are in relation to F 1.2

M. 4-6/1: Converse and write to exchange data about themselves and various matters around them, experiences, situations, news/incidents and issues of interest to society, and communicate the data continuously and appropriately.

3.2 Lacks

For the admission exams, their lack in reading parts is academic vocabulary and their lack in conversation parts is the language that Thai people never use and are not used to including culture of native speakers in conversations. Academic vocabulary and native speakers' language and culture for dealing with the admission exams are in accordance with F 2.2 M. 4-6/1: Explain/compare differences between the structures of sentences, texts, idioms, sayings, proverbs and poems in foreign languages and Thai language, and F 2.2 M. 4-6/2 Analyse/discuss similarities and differences between the lifestyles, beliefs and culture of native speakers and those of Thais, and apply them appropriately.

3.3 Subjectively Wants

The Matthayomsuksa 6/7 PWS students want to have reading techniques for taking the admission exams. They also want to do the admission exams in the parts of conversations. They can do the dialogues in the exams if their conversational skills are improved. They believe that a variety of materials such as games, video, and PowerPoint can help them prepare for the admission exams in both reading and conversation parts. Their subjective wants are according to F 1.1 M. 4-6/4: Identify the main idea, analyse the essence, interpret and express opinions from listening to and reading feature articles and entertainment articles, as well as provide justifications and examples for illustration, and F 1.2 M. 4-6/1: Converse and write to exchange data about themselves and various matters around them, experiences, situations, news/incidents and issues of interest to society, and communicate the data continuously and appropriately.

Discussions

Need analysis of each class is not the same although the three classes are in the same school. The Matthayomsuksa 6/1 PWS students need speaking for communication and their lacks are vocabulary used in conversations and reading new knowledge for speaking. They prefer speaking, reading, and vocabulary for conversations. For another class, the Matthayomsuksa 6/4 PWS students need reading skill and their lack is a variety of reading. They want to be able to read a lot. For the third one, the Matthayomsuksa 6/7 PWS students need reading strategies and conversations for the admission exams and their lacks are academic vocabulary and the language which native speakers use in conversations. They want to do well in the admission exams. For this reason, one material and methodology cannot be utilized for the three classes. The lesson in STAR STEMS should be designed in the three types for the three classes. What might be done is to combine the three types according to need analysis of each class as variety. Harmer (1991) comments concerning variety that “variety means involving students in a number of different types of activities and where possible introducing them to a wide selection of materials; it means planning so that learning is interesting and never monotonous for the students.”

Conclusions

The aim of this study is to qualitatively find the improvement of a lesson design in STAR STEMS to meet the students’ needs. From overall needs analysis, we can conclude that the Matthayomsuksa 6/1 PWS students like conversations while the Matthayomsuksa 6/4 PWS students want reading skill. However, the Matthayomsuksa 6/7 PWS students need to achieve the admission exams well. Students’ needs from qualitative needs analysis can

be vitally useful to improve a lesson design in STAR STEMS to meet the Matthayomsuksa 6/1, 6/4, and 6/7 PWS needs and interests. In particular, standard-based instruction together with the students’ needs analysis can create a further lesson in STAR STEMS to serve their needs and interests.

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