

Constructing and Developing the PISA - Like Thai Language Tests

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Abstract

This study aimed to develop the PISA-like Thai Language tests. PISA-like Thai Language test papers for eight levels, primary levels 2 - 6 and secondary levels 1 - 3, were constructed and assessed for quality. Test papers were constructed within the framework derived from analysis of learning standards and indicators stated in the B.E. 2551 Basic Education core curriculum of Thailand; each consisted of 45 items. Parallel test papers, 20 copies for each level, were constructed under the same framework and sent to experts, 5 experts per copy, for approval of content validity. The tests then were tried out with students, 100 students per copy. The results were analyzed to see level of difficulty and discrimination. Test items with suitable level of difficulty ($.20 \leq P \leq .80$) and discrimination ($r \geq .20$) were chosen and rearranged to make a 45 item test paper, 15 copies for each level. The test papers of all 8 levels, 15 copies per level, were used with 100 students per level to rearrange the test papers and separate each items by pattern of answer. The study showed that the PISA-like Thai Language test items, as approved by experts, were found to be valid in structure. The level of difficulty was between .35 - .78 while the discrimination was between .37 - .45. There are 8 levels of test papers, each class consisted of 15 copied, 675 items.

Keywords: Test Construction, Test Quality, PISA-Like, Thai Language

Introduction

The Office of the Basic Education Commission has strategies for improving the quality of education and learning assessment to raise the quality of education in Thailand and meet international standards. In addition, according to the evaluation at the national level from PISA in 2009 - 2012, the grades of Thai students have risen significantly. This is considered a good sign that Thai language education has potential for improvement, at least to a certain degree. Nevertheless, attempts to improve education quality remain a priority for the Office of the Basic Education Commission in order to prepare youths to become quality citizens with competitive capacity and capabilities in the future. Providing education that is consistent with these goals requires that students apply knowledge to real life situations with cognitive, analytical and problem-solving ability. Students must also be able to live their lives and participate in society based on a foundation of Thai language and technology. On the contrary, in practice, regardless of academic objectives, most students and teachers give importance only to learning about the facts and contents of textbooks. Assessment and evaluation focuses only on the knowledge obtained from a classroom, which is based on theory such as evaluating knowledge related to theories, principles, definitions and main concepts. As the world changes, there is an economic competition raising awareness and motivating each country to accelerate Thai language education because there is a hypothesis that the Thai language has a foundation that can help with learning other subjects. That's why there are many competitions in aspects of education. This idea occurs with every country that

wants to preserve its competitive capabilities, thereby leading to education reform, particularly on the subject of Thai language, which focuses on strategies that allow students to implement language skills in learning other subjects in higher education in the future. (Institute for the Promotion of Teaching Thai Language and Technology, 2014)

The Thai language is used by all Thais in daily life and at work in addition to technologies, instruments and consumer goods that humans use to facilitate daily life. These things are all a result of Thai language skills mixed with other creativities and sciences. The Thai language helps people to develop rational, creative, analytical thinking with knowledge-seeking skills and systematic problem-solving. People can decide by using verifiable information and eyewitnesses. The Thai language is an important foundation for a knowledge-based Thai society. That's why everyone's Thai language skills need to be developed in order to understand nature and man-made technologies with the ability to use that knowledge with reason, creativity and merit. (Bureau of Academic Affairs and Educational Standards, Office of the Basic Education Commission, 2009)

As for the assessment of international students' Thai language skills under the Program for International Students' Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS), both programs are useful for Thai language education. For PISA in 2006, we emphasized the assessment of language skills using the grades for every subject. Students who had completed the compulsory education were assessed to determine whether they had developed adequate knowledge and skills for real life. This is considered the foundation for development since PISA's main goal is not to assess students who are still in the classroom. However, an assessment was performed on the content, taking into consideration the expected competence, to determine how capable youths are using their knowledge and skills in real life. Therefore, the assessment focused on cognitive processes, comprehension of content, ability to understand related issues and ability to efficiently apply knowledge to real life situations.

The Bureau of Educational Testing, Office of the Basic Education Commission recognizes the importance of Thai language education and has, therefore, a project for commissioning educational institutes to create and develop tests in line with PISA guidelines with Thai language as one of the current developmental goals to prepare students for PISA from the primary to secondary levels in both assessment system training and evaluation at the classroom, educational institution and educational service area levels by using a PISA-like core test. In order to improve educational quality to meet international standards, the Bureau of Educational Testing recognizes the need to build an arsenal of quality standard tests to be consistent with the indicators prescribed by the Basic Education Core Curriculum 2008 to improve and develop students to meet standards. The Bureau has created a project for forming and developing standard tests based on the Basic Education Core Curriculum 2008 for each grade in core and basic subjects required for adulthood and living as part of Thai society in the future. For Thai language study materials, tests will be created and developed for the second, third, fourth, fifth and sixth grades of the primary level and the first, second and third grades of the secondary level by using curriculum standards and grade indicators as guidelines for creating tests. The goal is to use the tests in assessing the academic achievements of students and servicing the agencies involved in quality assessment and basic education quality assurance in the Thai language subject group. This will lead to improvement and development of curricula to improve the efficiency of Thai language education.

The Faculty of Education, Thaksin University, as the party executing the program for creating and developing standard tests in the Thai language subject in compliance with PISA, has implemented the aforementioned concepts and principles with consideration given to the aforementioned expected education management. The program focuses on the development

of assessment methods and tools within a frame that allows students to use knowledge that reflects high-order thinking and enables students to use knowledge and skills in real life. Moreover, the program also attempts to create tests to encourage students to be able to think, perform, solve problems and link issues related to the Thai language and ideas about the Thai language with the context of real life situations related to Thai language and to be able to express language competency and knowledge in addition to having a positive attitude with recognition of the value of the Thai language in the future.

Research Objectives

1. To create standard Thai language learning achievement assessment tests based on PISA and the Basic Education Core Curriculum 2008 in the second, third, fourth, fifth and sixth grades of the primary level and the first, second, and third grades of the secondary level by using standard curricula and grade indicators as guidelines for creating tests.
2. To assess the quality of the standard Thai language learning achievement assessment tests based on PISA and the Basic Education Core Curriculum 2008 in the second, third, fourth, fifth and sixth grades of the primary level and the first, second, and third grades of the secondary level.

Research Methods

Creating and developing standard Thai language tests based on PISA at the second, third, fourth, fifth and sixth grades of the primary level and the first, second, and third grades of the secondary level to be consistent with the indicators and Thai language learning content prescribed by the Basic Education Core Curriculum 2008. The content and Thai language learning standards include the following main five contents:

- Content 1: Reading
- Content 2: Writing
- Content 3: Listening, Watching and Speaking
- Content 4: Thai Language Usage
- Content 5: Literature

Each step was planned as follows:

1. Analysis of the standard Thai language tests prescribed by PISA at the second, third, fourth, fifth and sixth grades of the primary level and the first, second, and third grades of the secondary level.
2. Formation of a framework for the standard tests prescribed by PISA and ensure that the specific characteristics of the tests are consistent with the indicators for the standard learning curriculum for each grade from the second, third, fourth, fifth and sixth grades of the primary level to the first, second, and third grades of the secondary level. The scope of the framework is as follows:
 - Organization of Knowledge
 - Processing Skills
 - Thinking Skills
3. Create standard tests for the Thai language prescribed by PISA based on the test framework and covering every significant learning assessment standard ranging from comprehension, application, analysis, synthesis and evaluation with validity testing conducted by qualified experts. The format for tests as prescribed by PISA is as follows:
 - 3.1 Multiple-choice questions amount to 80 percent of actual tests used at each level/year.
 - 3.2 Complex and/or multiple-choice tests make up 10 percent of actual tests used at each level.

3.3 Short written response tests with grading criteria and sample answers account for five percent of actual tests used at each level.

3.4 Unrestricted response tests with grading criteria and sample answers comprise the remaining five percent of actual tests used at each level.

4. The quality of tests is verified in terms of language suitability for student grade, clarity of questions and answers, accuracy, suitability of difficulty, ability to sort capable students from less capable students and an acceptable reliability score. The objective is to produce high-quality tests for students at the second, third, fourth, fifth and sixth grades of the primary level as well as the first, second and third grades of the secondary level.

Findings

The construction and development of PISA-like standard tests in the Thai language for students from the first to sixth grades of the primary level and the first to the third grade of the secondary level for a total of eight grades, led to the construction and development of tests that adhere to standard learning indicators consistent with the Basic Education Core Curriculum 2008. The construction process was composed of the nine following steps: 1) analysis of standard learning indicators based on the Basic Education Core Curriculum 2008 and related documents; 2) creation of a standard test framework in line with PISA and setting of test specifications consistent with indicators; 3) test creation; 4) quality evaluation of constructed tests on validity; 5) first trial; 6) individual test analysis; 7) test quality improvement and volume creation in line with post-trial framework; 8) second trial; and test response analysis for determining suitability consistent with the set format and framework.

The aforementioned test construction and development produced the PISA-like tests on the Thai language that passed quality analysis and improvement for each grade as follows:

1. Grade 2, Primary Level: Thai language tests were obtained for the second grade of the primary level covering three learning strands and composed of three key standards and seven indicators for a total of 675 questions. Strand 1: Reading (390 questions); Strand 3: Listening, Viewing and Speaking (90 questions); and Strand 4: Principles of Thai Language Usage (195 questions). Most test questions range in difficulty from hard to intermediate, respectively. This level did not construct the second and fifth strand because of the age of examinee.

2. Grade 3, Primary Level: Thai language tests were obtained for the third grade of the primary level covering five learning strands and composed of five key standards and 12 indicators for a total of 675 questions. Strand 1: Reading (300 questions); Strand 2: Writing (75 questions); Strand 3: Listening, Viewing and Speaking (60 questions); Strand 4: Principles of Thai Language Usage (195 questions); and Strand 5: Literature and Literary Works (45 questions). Most test questions range in difficulty from hard to intermediate, respectively.

3. Grade 4, Primary Level: Thai language tests were obtained for the fourth grade of the primary level covering five learning strands and composed of five key standards and 12 indicators for a total of 675 questions. Strand 1: Reading (225 questions); Strand 2: Writing (60 questions); Strand 3: Listening, Viewing and Speaking (60 questions); Strand 4: Principles of Thai Language Usage (285 questions); and Strand 5: Literature and Literary Works (45 questions). Most test questions range in difficulty from hard to intermediate, respectively.

4. Grade 5, Primary Level: Thai language tests were obtained for the fifth grade of the primary level covering five learning strands and composed of five key standards and 12 indicators for a total of 675 questions. Strand 1: Reading (180 questions); Strand 2: Writing (105 questions); Strand 3: Listening, Viewing and Speaking (105 questions); Strand 4: Principles of Thai Language Usage (180 questions); and Strand 5: Literature and Literary Works (105 questions). Most test questions range in difficulty from hard to intermediate,

respectively.

5. Grade 6, Primary Level: Thai language tests were obtained for the sixth grade of the primary level covering five learning strands and composed of five key standards and 21 indicators for a total of 675 questions. Strand 1: Reading (150 questions); Strand 2: Writing (150 questions); Strand 3: Listening, Viewing and Speaking (120 questions); Strand 4: Principles of Thai Language Usage (195 questions); and Strand 5: Literature and Literary Works (60 questions). Most test questions range in difficulty from hard to intermediate, respectively.

6. Grade 1, Secondary Level: Thai language tests were obtained for the first grade of the secondary level covering five learning strands and composed of five key standards and 19 indicators for a total of 675 questions. Strand 1: Reading (225 questions); Strand 2: Writing (150 questions); Strand 3: Listening, Viewing and Speaking (30 questions); Strand 4: Principles of Thai Language Usage (225 questions); and Strand 5: Literature and Literary Works (45 questions). Most test questions range in difficulty from hard to intermediate, respectively.

7. Grade 2, Secondary Level: Thai language tests were obtained for the second grade of the secondary level covering five learning strands and composing of five key standards and 22 indicators for a total of 675 questions. Strand 1: Reading (195 questions); Strand 2: Writing (165 questions); Strand 3: Listening, Viewing and Speaking (105 questions); Strand 4: Principles of Thai Language Usage (120 questions); and Strand 5: Literature and Literary Works (90 questions). Most test questions range in difficulty from hard to intermediate, respectively.

8. Grade 3, Secondary Level: Thai language tests were obtained for the third grade of the secondary level covering five learning strands and composed of five key standards with 25 indicators for a total of 675 questions. Strand 1: Reading (225 questions); Strand 2: Writing (135 questions); Strand 3: Listening, Viewing and Speaking (135 questions); Strand 4: Principles of Thai Language Usage (135 questions); and Strand 5: Literature and Literary Works (45 questions). Most test questions range in difficulty from hard to intermediate, respectively.

Discussion

As a result of the construction and development of standard PISA-like tests on the Thai language, standard tests on all eight levels have been constructed covering all five learning strands consistent with the PISA standard test structure and test specifications. However, tests for the second grade of the primary level could not be constructed for Strand 3: Writing and Strand 5: Literature and Literary Works due to the low level of literary reading and writing skills in testing students. As for test quality on the aspect of difficulty, most tests are rather difficult, by which the low reading and analytical thinking skills of students prevented ease of completion. The findings are consistent with research by Bussaya Pakkaranang (2014), which produced a learning achievement test in the Thai language for the fifth grade of the secondary level and found that most test questions were rather difficult. In the same manner, the study by Kritsana Kiddee (2007), which constructed learning achievements in the Thai language for second year students at Uttaradit Rajabhat University found that no tests to range in difficulty from easy to intermediate. And Ladda Daosawang and Kamontip Sriprach (2017) developed a standardized mathematics test that covers the standard of learning content according to the Onet test of mathematics Grade 6 and investigate the quality of mathematics standardized tests, the sample group consisted of 513 students of Prathom Suksa 6 in Bangkok, Bangna District, the research result was 60 items which reached quality standard.

Recommendations

1. Construction of PISA-like Thai standard tests on the Thai language should not rely on standards and indicators in the Basic Education Core Curriculum 2008 as a framework because some standards and indicators are inappropriate and not suitable for PISA-like tests. Instead, the four evaluation frameworks of PISA should be used for Thai language comprehension, namely, context, performance, knowledge and attitude.
2. Complex tests should not be administered to young children. The experiment found that primary level students did not understand that all choices could be selected as their answers. Consequently, this type of test became difficult for primary level students, particularly those in the second and third grades.
3. According to the test analysis, most of the PISA-like tests on the Thai language were rather difficult because students were not adept or had never taken this type of tests before. Therefore, the Office of the Basic Education Commission should support and assist teachers in possessing knowledge on how to administer this type of test in order to train students in analytical thinking and reasoning skills for real-world applications.,
4. Reading problems in students greatly affected testing because the PISA-like tests on the Thai language required students to determine answers from given situations. Lack of reading comprehension in students produced boredom and caused students to develop an aversion to answering test questions.

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