
INSTRUMENT VALIDITY OF INDONESIAN LANGUAGE COMPETENCY TEST IN THE ELEMENTARY SCHOOL BASED ON INFORMATION TECHNOLOGY

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Abstract

This research aimed to describe the content and construct validity of test, instrument of Indonesian competency of elementary school student based on the information technology. The instrument was purposively designed/specifically developed for the fifth-grade students. This research was the part of Research and Development process. This research was conducted with qualitative method. The data were collected by questionnaires for content and construct validity assessment. A linguist and IT expert were assigned as validators. The results showed that 70% of the test had fulfilled the requirements regarding the material, construct, and linguistic aspects. Some points need be revised, including the functionality of distractors, illustration presentation, contextual text, and the requirement of High Order Thinking skills content. From IT aspect, it had fulfilled the following standards: the support of any kind of devices and platforms, has good security, was easily to design and usable. It had good appearance as well.

Keywords: *validity, language competency, IT based test*

INTRODUCTION

A test is an important component in the assessment of learning activity in the school. Tests are conducted to collect information on the learning achievement of the students compared to the predefined achievement target. Based on the forms, there are 2 types of tests including Paper Based Test (PBT) and Computer Based Test (CBT).

The test which is conducted in schools currently still tends to utilize the conventional methods, which is PBT. However, PBT has quite a lot disadvantages such as more time and cost requirement, more vulnerable to cheatings, more time consuming in the correction process, as well as the complex score processing and feedback provision to the respondents (examinees).

Technology has been utilized in order to help improving the learning quality. The utilization of learning technology has stronger impact along with the development of information and communication technology which had reached the society. The learning activities which involve technology which is commonly called as e-learning are a learning process through the utilization of technology or computer based learning (Nurchaili, 2010). This

technology would work by the support of internet. The utilization of technology in the learning activities has changed the learning perspectives from “class” to “anywhere”, from “time cycle” to “realtime”, from “paper” to “online”, and from “physical facility” to “networks” (Abdullah, 2009).

To measure the competency of the students toward particular subject, assessment process should be conducted. Bennett and Gitomer (2009) divided the assessment into three, including the tool to detect learning difficulties, assessment of learning process, and assessment to measure the achievement of learning outcomes. The assessments serve to improve the quality of learning process (Muslich, 2011).

In the assessment (test) activities, there are two types of test which are written test or PBT and computer based test of CBT. PBT is examination activity which involved paper utilization as been conducted until recent years, while CBT is paperless test which utilizes computer.

Each model has its advantages and disadvantages in the test application. The models can be differed into computer based test (CBT) with exact/certain questions packages and questions which is arranged or adjusted to the competency of

the examinees (CAT). The CAT model contain a number of questions with various difficulty levels and other question characteristics. The examinees directly face the computer and the answerable questions could appear one by one on the screen according to the competency of the examinees. Of all the available question items, if the examinee can not answer or give the wrong answer at certain level, the the test would be terminated. Based on the answered questions, the competency level of the examinees could be known or achieved and when the examinees has exceeded the defined target then the examinees would be stated as succeed. However, if the examinee achievement was less than the defined target, they could do a remedial until they pass the test.

This research is a part of R & D research. The aims of this research are to describe the content and construct validities of competency test instruments of Indonesian language proficiency of elementary school students based on the information technology. The instruments of competency test of Indonesian language is specifically developed for the fifth grade elementary school students. The research was conducted with qualitative method. Data collection was conducted by questionnaire of validity test as the foundation of content and construct validities. The analysis was done by two experts, including linguist and IT specialist.

RESEARCH METHOD

The subject of this research was the development of IT based questions on language proficiency. The appropriateness of IT based language proficiency tests items was defined based on the content and construct validity. The IT specialist assessed the support, security, arrangement, utilization, and interface capacity. While the linguist assessed the appropriateness of materials, construction and utilization of language. The results of the validities from the experts were calculated cumulatively, then summarized. The validity level of the instruments was defined by the sum of scores resulted from the calculation.

RESULT AND DISCUSSION

Validation of IT Specialist

The instrument validity was examined by two experts in the related field. The IT validators were lecturers in Informatics Technology. The reliability of the question items was examined through five aspects, including the capacity on supports, security, arrangement, utilization, and interface. The following table provides detailed information of assessment result from the IT specialists.

Table 1. Validity Result of IT Specialists

Rubric	Aspect	Score	Level
Supports	Supports for electronic hardwares	4	Great
	Supports for various platforms	4	Great
Security	Capability to protect the data from being leaked	3	Good
	Data security system	3	Good
	Output or data tabulation	4	Great
Arrangement	Easiness of question writing / question input to the system	4	Great
	Easiness in providing answer choices	4	Great
	Easiness in the creation of key answer and scoring	4	Great
Utilization	Easiness of answer input	3	Good
	Easiness in score checking	4	Great
	Easiness in question reviewing	3	Good
	Capability to minimize the cheats during tests	3	Good
User Interface	The quality of letters display	4	Great
	The beauty and conformity of the interface	4	Great
	Clear working instruction	4	Great

Based on the validation result in the Table 1, it is obvious that the IT based test questions had fulfilled the great appropriateness criteria. The test questions had supported various hardwares and platforms, thus it was easy to use and had high accessibility level. The question arrangement method was easy, wether the input of the questions, answer options creation, and scoring processes. Beside, the user interface presentation was quite friendly, wether the font selection, interface design, and working guide. However, among the advantages there were several

aspects which needed to be improved. The first was the security system and the second was the utilization. The IT experts suggested to limit the presentation of questions at each session with maximum of 10 questions, thus the respondents would not need to scroll too much within a page.

Validation of Linguist

The validation by linguist was done by a lecturer of Indonesian Language Education Program. The assessment was conducted to several aspects, including the materials, construction, and language/culture. The following table shows the validity test result from the linguist.

Table 2. The Result of Validity by Linguist

Rubric	Aspect	Score	Criteria
Materials	The questions conform the indicators	3	Good
	The deceiver works.	2	Fair
	Each questions has single correct answer.	4	Great
Construction	The principal questions are formulated clearly and firmly.	3	Good
	The formulated principal question and answer choices are required statements.	3	Good
	The principle questions do not provide clue to the correct answer.	3	Good
	The principle questions do not contain statements with double negative attribute.	3	Good
	The answer choices are homogen and logic from the materials perspective.	3	Good
	The length of the answers choices formulation are relatively similar.	3	Good

	The answer choices do not contain the statement “all the answer choices are wrong” or “all the answer choices are right”.	3	Good
	The answer choices which are numbers or time are arranged based on the order of the size of the numbers or chronology.	3	Good
	Figures, graphics, tables, diagram, inscription, etc in the questions are clear and functional.	1	Poor
	The formulation of questions principles do not use the expression or words with uncertain meaning such as: preferably, generally, sometimes.	3	Good
	The question items are not dependent to the answer of previous questions.	3	Good
Language/ Culture	Each questions utilized appropriate language to Indonesian language rules (subject, predicate, child sentence, word selection, word writing, letter writing, utilization of punctuation).	2	Fair
	The language is communicative, thus the statements are easily understood by the students.	3	Good
	The answer choices do not have repetitive words/ phrase which are not in the same meaning.	3	Good

Materials

The questions had been arranged according to the indicators and only has single correct answer. However, the questions were still weak in the presentation of answer options. The answer options did not have proper deceiver. This would impact the reliability of the questions in assessing the analytical capability level of each student.

Constuction

In terms of construction, the questions had been presented properly. Almost all of the criterias were fulfilled. However, weaknesses were still found in the utilization of graphics, figures, tables, inscriptions, etc. Through the proper presentation of graphics, figures, tables, and inscriptions, the teachers would achieve proper description concerning the capability of each student in finding the data.

Language/culture

The utilization of language in the questions was proper. The language was communicative and the answer choices did not contain repetitive words or phrase from the questions. However, weakness was found in the utilization of appropriate language in accordance with Indonesian language rule.

CONCLUSION AND SUGGESTION

Conclusion

The results showed that the questions of IT based language proficiency test on the fifth grade of elementary school students had fulfilled several question's feasibility components, including the materials, construct, and linguistic. However, from the linguist perspective there are several weaknesses such as not maximal deceiver; lack of functionality on figures, graphics, tables, diagrams, and inscriptions; and inappropriate linguistic toward proper Indonesian language rules. While from the IT perspective, it had fulfilled the standard such as the support of various hardwares and platforms, proper security system, easy arrangement process, easiness of the utilization, and good user interface.

Suggestion

The matter which requires attention in the writing of IT based questions is assessment rubric in the validation sheet. By referring to the validation sheet, we could create ideal questions to be implemented in the class. With the ideal questions, we could assess the capability of particular individuals and we could find valid data from the assessment results.

REFERENCES

- Abdullah, S. 2009. Pemanfaatan Teknologi Informasi Untuk Mencapai Standar Proses Pembelajaran Matematika. *Fasilitator* (4), hlm 43-47.
- Albasyariah. (2015, Februari 24). *UJIAN NASIONAL 2015 Berbasis "computer based test" (CBT)*. Retrieved from albasyariah: <http://albasyariah.sch.id/?p=417>
- Bennet, R. E. & Gitomer, D.H. 2009. Transforming K-12 Assessment: Integrating Accountability Testing, Formative Assessment and Profesional Support In C. Wyatt-Smith & J.J. Cumming (Eds). *Educational Assessment in the 21st Century: Connecting Theory and Practice*. London: Springer.
- Gregory. R. J., 2013. *Tes Psikologi Sejarah, Prinsip, dan Aplikasi Edisi Keenam Jilid 2*. Jakarta: Penerbit Erlangga.
- Luecht, R. M., & Sireci, S. G. 2011. *A Review of Models for Computer-Based Testing*. College Board.
- Muslich, M. 2011. *Autentic Assessment: Penilaian Berbasis Kelas dan Kompetensi*. Bandung: Refika Atif.
- Nurchaili. 2010. Pengaruh Media Pembelajaran Berbasis Teknologi Informasi Dalam Proses Pembelajaran Kimia Terhadap Hasil Belajar Siswa. *Jurnal Pendidikan dan Kebudayaan* 16 (6), hlm. 648-658.
- Purwanto. (2009). *Evaluasi Hasil Belajar*. Yogyakarta: Pustaka Pelajar.