DEVELOPING AN INFORMATION LITERACY TEST FOR TEACHER EDUCATION

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Abstract

Author of this article has developed an information literacy test for teacher education. Though various standardized information literacy tests are available across the globe, by considering our educational system those tests could not be applied in India. The present paper focuses on the need of discipline specific information literacy test, and the process of test development. Author applied the test development stages suggested by UNESCO for test development and for standardization, author applied item analysis. This test is the output of collaboration between a librarian and teacher educators.

Introduction

Information Literacy is the key to survive in an information age. Abundant of information is produced every second. Without Information Literacy skills, no one can reach to his/her required information. So many universities, associations, organizations are developing and implementing   the Information Literacy programmes. Though information Literacy Programmes varies in nature i.e. course integrated, standalone, subject specific, credit based, all the programmes include an Information Literacy assessment in order to check the effectiveness of program or to assess the Information Literacy skills acquired by the students. Assessment of information skills of students is the prime objective before developing and after implementing the Information Literacy program. Now days, various Information Literacy tests are developed. These tests are on the basis of standards laid down by various associations or organization working in the field of Information Literacy. But the point is that, all the tests are developed in developed countries. The educational, cultural system in

developing countries like India is different. The tests, although validated and reliable cannot be used as it is in our educational system. Moreover, Information Literacy is not a single entity; it must be used in relation with specific subject. Therefore, the general Information Literacy tests have some limitation. If a specific Information Literacy test in relation with specific subject is developed, the content and all the dimensions of information in that particular subject can be covered. So researcher has undertaken the present research to develop an information literacy test in order to assess the Information Literacy skills of students in education.

Objectives

1. To frame test items based on ACRL Standards of information literacy.

2. To check the content validity.

3. To check construct validity through item analysis.

Standard based Information Literacy Test

The present test is based on ACRL information literacy standards for teacher education.[1] The main purposes of these standards are to

1. Guide teacher education faculty and instruction librarians in developing information literacy instruction for teacher education students.

2. Enable the evaluation and assessment of such instruction and curricula through benchmarking outcomes.

Though these standards are the framework for developing, evaluating and assessing the information literacy programmes, they also provide the framework for developing information literacy assessment test.

Literature review

Various Information Literacy tests are available. Many of these tests are standard based and checked for validity and reliability. But as mentioned earlier, Information Literacy is not a single entity, it should be considered in relation to specific subject. So these tests can not be used in the field of teacher education .In case of teacher education, Penny Beile[2] has developed and validated information literacy test (B_TILED) for pre service education in 2005. This test is based on ACRL Information Literacy Standards for Higher Education. In

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[1] Information Literacy Standards for Teacher Education. Available at
http://www.ala.org/acrl/sites/ala.org.acrl/files/content/standards/ilstandards_te.pdf.

[2] Beile, Penny(2005). Measuring Information Literacy Skills in Education. Orlando:VDM Verlag Dr. Muller Aktiegesellsjaft & Co.KG.

her test she has considered all the standards, performance indicators and selected learning outcomes. But, in 2011, ACRL has published Information Literacy Competency Standards for Teacher Education. So new Information Literacy test based on specific standard needs to be developed.

Scope of the Research

The test is based on the Information Literacy Competency Standards for Teacher Education laid down by ACRL in April 2011. The test addresses to all the performance indicators in all the six standards of ACRL.

Limitation of the research

Each performance indicator of each standard has expected learning outcomes. For present research, selected learning out comes in relation with level of students, general availability of information sources in educational college libraries, information technology awareness of students and live experience of researcher.

Population and Sample

The present study is carried out in "Adarsha Comprehensive College of Education and Research, Pune, Maharashtra". The strength of students in the college is 160. For present research, 25% students i.e. 40 out of 160 are selected by random sampling method.

Methodology

The process of test development was carried out in six steps. The development process includes content analysis, test drafting, validation of content, item analysis, reliability checking and finally the finalizing of the test. The following figure explains the flowchart of the test development process, these steps are adapted from the series on Quantitative Research Methods in Educational Planning by International Institute for Educational Planning[3] UNESCO.

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[3] Ross, Kenneth(2013). Quantitative Research in Educational Planning, UNESCO, available at http://www.iiep.unesco.org/capacity-development/training/training-materials/quantitative-research.html
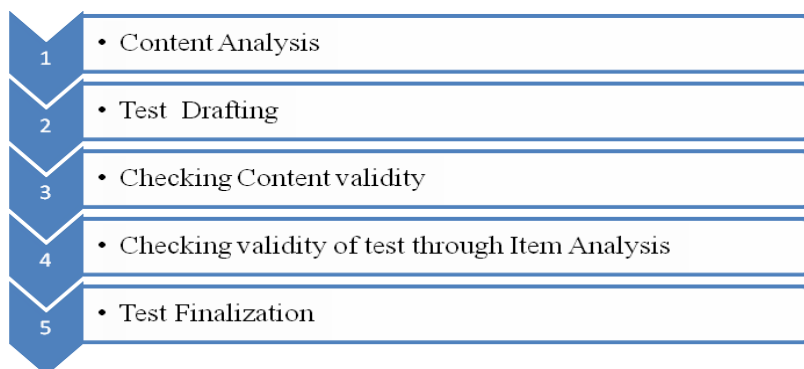
Figure 1

Content Analysis: It provides a summary of the intentions of the curriculum expressed in content terms. Which content is supposed to be covered in the curriculum? Are there significant sections of this content? Are there significant sub divisions within any of the sections? In present research ACRL Information Literacy Competency Standards for teacher education are used as a curriculum. All the standards and their performance indicators have been covered. But all the learning outcomes of have not been covered due to difference in education system and practices in developed countries and in India. By considering our educational system, classroom practices and researchers' experiences and objectives of the present research, selected learning outcomes of each performance indicator in each standard have been covered.

Test Drafting: A test drafting is a specification of what the test should cover rather than a description of what the curriculum covers. A test blue print should include the test title, the fundamental purpose of the test, the aspects of the curriculum covered by the test, an indication of the student for whom the test will be used, the types of tasks that will be used in the test, the conditions under which the test will be gives, score the responses etc. The present test covers all the major aspects mentioned in ACRL Information Literacy Competency Standards for teacher education. The fundamental purpose of the test is to assess the Information Literacy skills in students of education. To assess the skills in need identification, resource selection, accessing the information from various sources, evaluating the resources and information, analyzing and synthesizing the information, a test is developed by a name "Information Literacy assessment test for teacher education". Some items are imported for B-Tiled test with prior permission of Dr. Penny Beily .In this test various types of items are included like, objective, true/false, multiple choice, yes/no type. Some items are based on hypothetical situations which may occur in a classroom or during teaching practice. Some items are constructed to judge the knowledge about sources, some are

Constructed to test the skills of a teacher to select particular source for particular information for particular age group.

Content Validly: Why should the proposed trial test be reviewed? The choice of what to assess, the strategies of assessment, and the modes of reporting depend upon the intentions of the curriculum, the importance of different parts of the curriculum, and the audiences needing the information that assessment provides. If we do not select an appropriate sample of evidence, then the conclusions we draw will be suspect, regardless of how accurately we make the assessment.

Initially a test of 70 education-specific, multiple choice test items based on ACRL Information Literacy Competency Standards for teacher education and objectives of the present research were developed. These test items were organized according to selected learning outcomes in concerned performance indicators mentioned in each of the ACRL Information Literacy Standards for Teacher Education.

As the developed test is being used for students of education, the review panel was included Education and LIS and Information Literacy experts. The test along with the ACRL document of Information Literacy Competency Standards for Teacher Education was given to each of them and requested to give their expert opinions on :

1. Is each test item reflects learning outcome of concerned performance indicator of concerned standard?

2. Is the wording of test item is appropriate for sample of the present research?

3. Are there unintended clues for correct answers?

4. Is there single clearly correct answer for each item?

5. Are there unique options for the question like Match Making?

6. Are the hypothetical situation given in the test reflects the present classroom practices?

7. Are there enough items to cover all the dimensions of information skills prescribed in ACRL standards?

Researcher personally discussed with each of the panel member and through brain storming, some items and choices were reconstructed, omitted, changed and added. And the test of 63 items is made finale for further process.

Item Analysis:

By item analysis, the effectiveness of each item can be determined by analyzing the pupil's responses to the item. This item analysis s usually designed so that answers to the following questions can be obtained.[4]

1. How difficult is the item? That is, what is its difficulty value?

2. How well does the item discriminate between high and low achievers? That is, does the item have any discriminative value?

3. How effective is each of the distracters in the item?

The developed test, as discussed earlier, has two parts. Awareness testing and skills test. The test items in the skill testing part are in multiple choice format. For awareness testing items students are asked to tick on response/s . Therefore, for item analysis, the items that intended for awareness testing are not included. The item analysis of 34 questions is carried out through following steps.

For present test the item analysis was carried out in the following way.

1. Ranked the test papers in order from the highest to lower score.

2. Selected the 27% papers from each group i.e. 10 papers from higher group and 8 papers from lower group.

3. For each item tabulate the number of pupils in the upper and lower group who selected each alternative. (Table 1).

4. Estimate the difficulty of each item

5. Estimate the discriminating power of each item.

6. Evaluate the effectiveness of the distracters in each item.

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[4] Dandekar, W.N. (1971), Evaluation in the school. Pune: Kulkarni, pp.138

Item Analysis Matrix

Item : You are trying to search the information using search engine on "Problems of teen agers in India" which of the following strings is the most appropriate according to you.

a. Problems, teen agers, India. b. problems, school boys & school girls, India. c. problems, students, India. **D. problems, adolescents, India.**

Alternatives	A	B	C	D	Total
Upper Group	1	2	1	6	10
Lower Group	3	2	2	3	10

Difficulty Value = 45%

Discriminating Power : 0.3

The difficulty value of the said question is 45%. We can pre decide the difficulty value of each question in (say difficulty level of each question should not be beyond 60%). Therefore, this item has moderate difficulty value.

Discriminating power of this item is high, so it is fact that the distracters in this item are more sensitive and not easily discreditable.

The above process of item analysis for calculating difficulty value and discriminating power was carried out for each multiple choice item. The items of which difficulty value is greater than 60% were excluded from the test. 4 multiple choice questions were deleted.

The item having discriminating power in range of 0.2 to 0.9 was not changed, but in the case of items of which discriminating power is greater than 01, the distracters of those items were modified. Distracters of 3 items were modified.

An Information Literacy assessment test for teacher education is validated on the basis of content review and item analysis.

Conclusion

For assessing Information Literacy of students, a simple questionnaire is not of use. A properly developed and validated comprehensive test based on some authorized standard can assess the Information Literacy effectively.   Like Information Literacy, the test must be subject specific and based on day to day practices. Through this type of test, we can assess the awareness about various information sources as well as the knowledge and understanding of information sources and skills to access the information from particular source.

Referenes

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