CONTENT VALIDITY OF ICT ATTITUDE SCALE

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Abstract

This article describes the process of the content validity of ICT Attitude Scale. Survey design to measure B.Ed students' attitude towards information and communication technology (ICT). For that constructed and standardized ICT Attitude Scale and for content validity used so many techniques on the basis of expert's opinion and by using statistical treatment calculated content validity. Here discussed some content validity techniques which are based on expert's opinions.

Key Words: ICT attitude, ICT Attitude Scale, Content Validity and Methods of Content Validity.

INTRODUCTION:

ICT: Information and Communication Technology now a days it is an essential global communication tool. In lockdown time it is only way of communication for academic as well as social purpose which plays vital role in Covid 19 period. In context to education, purpose of ICT is to help teacher to motivate students and enhance effectiveness of teaching and learning process. ICT in education are being to used to develop course material, delivering content, sharing content, and make presentations for lecture delivering. Today central government as well state government actively promotes ICT in education. Even in New Educational Policies 2020, promotes integration of ICT in teacher education.

The National Policy on Education 2020 has several initiatives to integrate ICT into teacher Education including,

1 Pilot Studies

2 Digital Infrastructures

3 Online Teaching Learning Platforms

4 e-content

5 CPD

6 Mentoring

7 e-courses and virtual labs

8 National Educational Technology Forums

9 Ed Tech companies and startups

In NEP1986 and revised in 1992 recommendations, as a response so many universities introduced ICT as a special subject and also as a pedagogical subject. Savitribai Phule Pune University introduced ICT as a core subject, with pedagogy subject and as a teaching competency.

I have curiosity is there any standardized measurement to check ICT Attitude which is developed by this B.Ed training. For this purpose constructed and standardized ICT Attitude scale and this paper covered the content validity and methods of content validity of ICT Attitude Scale.

CONTENT VALIDY:

1Validity is a mandatory part of standardization of scale. Validity means how accurately a method measures what it is intended to measure that means validity of scale means how accurately a scale measures ICT Attitude.

2 Content validity is a crucial part of validation process. Content validity means how well ICT Attitude Scale measures ICT Attitude and ensure that result of a scale is meaningful and is reliable.

3 On the basis of expert's opinion and given scores and remark we can calculate content validity of scale through statistical treatment.

METHOD USED FOR CONTENT VALIDITY

We can use following quantitative methods for content validity. Here some methods are discussed which can useful for content validity. These all methods are based on expert's opinion.

1 Content validity ratio (CVR)

2 Content Validity Index (CVI)

3 Expert Reviews

4 Delphi Method

1 Content validity ratio (CVR)

The content validity ratio originally proposed by Lawshe(1975) is widely used to quantify content validity. (Critical values for Lawshe's content validity ratio- ramliaz.github.io)This process is to involve asking experts to determine whether the knowledge or skill or construct that each item on the scale assesses is 'essential', 'useful' but not necessary or not necessary. This method is essential a form of inter – rater reliability about the importance of each item. In the quantitative method the content validity ratio are measured. It's calculated using expert rating.

Formula for calculating CVR.

$$CVR = (N_e - N/2)/N/2$$

Where N_e= the number of experts who indicate that the statement is essential

N= the total number of Experts.

CVR is determined using Lawshe's table. If more than half experts indicate that a statement is essential, it is considered to have good content validity.

CVR value range from -1 to +1

- **CVR > 0.78 =** Excellent content validity

- **0.78 > CVR > 0.58 =** Good content validity

- **0.58 > CVR > 0.38 =** Fair content validity

- **0.38 > CVR > 0.00 =** Low content validity

- **CVR > 0.00 =** No content validity

For example if Ne= 10 and N=15 then CVR is calculate by using above formula,

CVR= (10-15/2) / (15/2)

CVR= (10- 7.5) / (7.5)

CVR= 2.5 / 7.5

CVR= 0.33

CVR Interpretation:

Fair content validity (borderline)

This indicates some experts agree on item relevance and item may require reform.

To improve content validity:

Reform item based on expert feedback and consider additional expert reviews.

(References: Lynn, M.R.(1986) Determination and quantification of content validity)

2 Content Validity Index (CVI)

Lawshe (1975). A quantitative approach to content validity. This process is to involve asking experts to determine whether the knowledge or skill or construct that each item on the scale assesses is 'essential', 'useful' but not necessary or not necessary. Content validity index measures the relevance of each statement on a scale and the CVI is the mean CVR for all items on a scale. CVI measures the proportion of items with acceptable content validity ratios

Formula for calculating CVI,

CVI= CVR/Total number of items for total scale and for each statement CVI/N

Content Validity Index = 0.78 or higher means adequate content validity.

CVI categorization :

- **CVI > 0.8 :** Excellent Content Validity

- **0.8 > CVI > 0.6 =** Good Content Validity

- **0.6 > CVI > 0.4 =** Fair Content Validity

- **0.4 > CVI > 0.0 =** low Content Validity

For example if mean CVR of 40 items is 0.33 and total items of scale are 40 then CVI is calculate by using above formula,

Only 12 items have CVR> 0.56 based on mean CVR=0.33

Therefore CVI= 12/40

CVI= 0.3

Interpretation:

CVI = 0.3 indicates low content validity

This suggests only 30% of items meet good content validity and majority of items reform.

Low content validity indicates that items may not be adequately measure the intended construct and expert's opinions are not strongly aligned.

(Reference: Polit, D. F., & Beck, C. T. (2006). *The Content Validity Index.)*

3 Expert Reviews

Experts in the relevant field i.e. Educational field and have 10 year experience and teach ICT subject. Expert's opinion is valuable and important for a content validity. It fills the gap of information. It is useful to complement empirical evidence. Main objective of experts' opinion is to take guidance for content validity.

We can use opinionnaire for data collection from experts'. We can develop opinionnaire in the light of objectives and give proper information about Objective of expert opinions, scoring scheme for statements and domains, indicators of ICT attitudes and ICT topics on which statement are based.

Criteria of Acceptance Or Rejection Of Statement Given By Lawshe:

1 Score of statement is six that means 6 experts are given 1 score then that statement is accepted.

2 Scores smaller than 3 that means fewer than 50% then the statement is rejected.

3 Scores smaller than 1 and larger than equal to 3 then statement is accepted with expert's remark and makes changes according to remark.

4 Delphi Method

The concept of using expert opinion for forecasting is known as the Delphi Method. The Delphi method was invented by Olaf Helmer and Norman Dalkey of the Rand Corporation in the 1950s for the purpose of addressing a specific military problem. The method is based on the assumption of forecast from a group are more accurate then individuals. (Otexts.com)

Delphi method involves experts rating items on a scale and then revising their ratings based on feedback from other experts.

Validity of ICT Attitude Scale is establishing by using above methods of content validity.

This paper discussed the types of content validity and how to use these methods for content validity and how to use statistical techniques to calculate validity ratio, validity index and

how to use Delphi method which involves group of experts. This paper helps us to decide which method can select for content validity and how to calculate and interpreted the calculated values and to take decision about content validity and items of scale.

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