

DEVELOPMENT OF “ICT (INFORMATION AND COMMUNICATIONS TECHNOLOGY) KNOWLEDGE SCALE OF B.Ed TRAINEES”

*¹D.Senthilmurugan,
^{*1} Assistant Professor,
 Department of Education,
 E.S.College of Education, TamilNadu
 Villupuram,
 TamilNadu, India-605601.

²T.Sivasakthi Rajammal,
²Assistant Professor,
 Department of Educational Psychology,
 Teachers Education University,
 Karapakkam, Chennai,
 TamilNadu, India-600097.

Abstract: In the progress of this study, ICT (Information and Communications Technology) knowledge scale have been constructed and standardized for the B.Ed trainees. This scale consists of 76 statements. The simple survey method was used for this current research. The sample consists of 117 B.Ed trainees randomly selected from Villupuram Districts. The “Cronbach’s Alpha” formula was used to regulate the ICT knowledge scale and finally out of 76 statements, 66 statements were retained in the final study.

Key words: *Information and Communications Technology (ICT), B.Ed trainees, teaching, learning, knowledge, items.*

I. INTRODUCTION

Teachers need precise, professional development opportunity in order to increase their ability to use ICT for determining learning assessments, individualized instruction, accessing online resources and for fostering student interaction and association. Such guidance in ICT should positively impact teachers general attitudes towards ICT in the classroom, but it should also provide specific guidance on ICT teaching and learning within each discipline. Lack of ICT knowledge, tend the teachers to use ICT for skill-based applications and preventive student academic thinking. To support teachers, ICT is also essential for instruction administrator, supervisors, teacher educator and decision makers to be skilled in ICT knowledge.

Teachers have a central role in developing new learning models and this is particularly important in integrating ICT in classrooms. Recent reviews of ICT in education and empirical studies identify the significance of teacher development in their process of teaching (Webb, 2005). The complex process of preparing teachers to use ICT for professional development to focuses on adult learning rather than training (McKenzie, 2002). Viewed as adult learners, teachers can make personalized choices about daily learning to transfer new skills into practice via personal learning journeys. The process of preparing teachers to use technology must be viewed from a whole-institution which encourages change over time (O’Bannon and Judge, 2005). Support must be made available at various levels, such as: professional development to increase teachers confidence and skills in choosing software and integrating ICT across the curriculum, administrators investing funds and ICT support staff assisting with technical and curricular needs. Districts have to support teachers over extended periods of time through a model that is grounded in professional development and a cycle of collaboration, enhancement, enactment and reflection (Seels and Campbell, 2003, Renato Schibeci et.al, 2008). Thereby, on understanding the needs of new requirements an ICT knowledge scale was implemented for the B.Ed trainees.

II. REVIEW OF RELATED LITERATURE

Arthi.S and Ramakrishnan.V (2016) conducted a study to know the attitude of B.Ed. student-teachers towards ICT in relation to Social Intelligence (SI). 150 samples were used in this study. The normative survey method was adopted and data were analyzed using “m’ test. There was a significant difference found in the attitude of B.Ed. student-teachers towards ICT with respect to gender, medium of instruction and no significant difference was found in the level of Social Intelligence among B.Ed. student-teachers.

Meenakshi Srivastava (2016) conducts a survey to enhance the quality of teaching through ICT-A in B.Ed. programme. In this article the population for the study consisted of 200 B.Ed. students studied in S.S.Khanna Girls Degree Colleges in the academic year 2014 and 2015 at Meerapur in Allahabad. This reveals that a special care and extra coaching can be provided to the B.Ed. trainees regarding the awareness of ICT –A. Thus, the growing use of ICT as an instructional medium is changing and will likely continue to change many of the strategies employed by both teachers and students in the learning process.

Master Arul Sekar J and Arul Lawrence AS (2015) examine the attitude of B.Ed. students towards ICT. As a result, there is no significant difference in the attitude of B.Ed. students towards ICT with regard to gender, discipline, course of study and locality. From the study it was concluded that B.Ed. students studying in aided colleges of education are better than government college students in their attitude towards ICT.

Nai Li et.al, (2004) an analysis on women student attitudes toward the internet and used in educational contexts from a cross-cultural perspective and cultural issues related to the internet was also explored. Initial samples are compared with the 79 Chinese students and 91 British students by giving the same questionnaire about their attitudes toward the internet. As a result,

there was a cultural difference between the two samples in terms of attitudes and usage characteristics towards the Internet. Chinese students reported as less usage of computers and the Internet, but were far more positive attitude than the British. From this study, the usage of the internet was found to be a cultural heritage and also background characteristics of students in all the country.

Athanassios Jimoyiannis and Vassilis Komis (2007) examine current teachers beliefs and attitudes towards ICT in education. In this study, 1165 primary and secondary education teachers participated who attend the training programme on basic ICT skills. The results showed that on attending the training programme, the majority of the teachers in the sample have a positive attitude towards ICT in the educational process. The negative parameters of the authors towards ICT revealed many teachers cautious about ICT integration in educational practice. Multivariate analysis was identified by using three groups of teachers who's having positive attitudes, a second group with negative attitudes and a third one with a neutral viewpoint about ICT in education. They found that personal factors such as subject matter, teaching experience and gender are strongly associated with the beliefs and perceptions teachers hold about ICT in education.

III. PILOT STUDY

The ICT knowledge scale of 76 statements intended for the pilot study was administrated to the sample of 117 B.Ed trainees studying in the Villupuram Districts, Tamil Nadu, India. Then, their answers have been calculated carefully and the marks secured by all the B.Ed trainees have been arranged in the descending order from the highest score to lowest score. Therefore, they were subjected to the statement investigation.

IV. CONSTRUCTION OF ICT KNOWLEDGE SCALE

The investigator constructed the ICT Knowledge scale. The scale used for the pilot study, consists of 76 items. All the 76 items were with five point scale (1) always, (2) often, (3) sometimes, (4) occasionally and (5) never type answers. The direct study was conducted for 117 B.Ed. trainees in order to validate the constructed ICT knowledge tool. The investigator scored the test by giving descending order value from 5 to 1 for the positive response. Then, investigator calculated the marks secured in each sample. Based on the total marks secured by the sample item total correlation was used to identify the reliability of the tool. The statements which have a value above than 0.3 level was selected for the final study. Thus out of 76 items, 66 items were selected for the final study. The selected statements from the pilot study were chosen by using Cronbach's alpha method, which are given in Table 1.

Table 1. Item Analysis for ICT Knowledge Scale and Selected Items for Final Study

Item No.	Item Total Correlation	Selected / Not Selected
1	0.545	Selected
2	0.341	Selected
3	0.391	Selected
4	0.357	Selected
5	0.515	Selected
6	0.367	Selected
7	0.589	Selected
8	0.232	Not Selected
9	0.477	Selected
10	0.390	Selected
11	0.472	Selected
12	0.324	Selected
13	0.576	Selected
14	0.312	Selected
15	0.375	Selected
16	0.244	Not Selected
17	0.299	Not Selected
18	0.557	Selected
19	0.505	Selected
20	0.607	Selected
21	0.334	Selected
22	0.476	Selected
23	0.341	Selected
24	0.256	Not Selected
25	0.360	Selected
26	0.526	Selected
27	0.321	Selected
28	0.383	Selected
29	0.442	Selected
30	0.349	Selected
31	0.400	Selected
32	0.403	Selected
33	0.565	Selected

34	0.637	Selected
35	0.343	Selected
36	0.436	Selected
37	0.446	Selected
38	0.248	Not Selected
39	0.528	Selected
40	0.469	Selected
41	0.672	Selected
42	0.360	Selected
43	0.456	Selected
44	0.359	Selected
45	0.415	Selected
46	0.534	Selected
47	0.135	Not Selected
48	0.456	Selected
49	0.442	Selected
50	0.529	Selected
51	0.336	Selected
52	0.456	Selected
53	0.354	Selected
54	0.264	Not Selected
55	0.479	Selected
56	0.436	Selected
57	0.245	Not Selected
58	0.433	Selected
59	0.443	Selected
60	0.320	Selected
61	0.649	Selected
62	0.593	Selected
63	0.492	Selected
64	0.416	Selected
65	0.258	Not Selected
66	0.386	Selected
67	0.620	Selected
68	0.410	Selected
69	0.485	Selected
70	0.314	Selected
71	0.401	Selected
72	0.390	Selected
73	0.207	Not Selected
74	0.495	Selected
75	0.647	Selected
76	0.454	Selected

V. DESCRIPTION OF THE ICT KNOWLEDGE SCALE OF B.Ed. TRAINEES

The ICT knowledge scale was constructed and validated by the investigator. The investigator constructed tool on the basis of the literature collected with regard to ICT knowledge of B.Ed trainees and its dimensions namely, effective teaching, attitude thoughts, economic impact, creative thinking and life based learning. A total of 76 statements were prepared on the basis of the dimensions of ICT knowledge of B.Ed trainees.

VI. DIMENSIONS OF THE ICT KNOWLEDGE OF B.Ed. TRAINEES

The following dimensions denotes the ICT Knowledge of B.Ed trainees,

- Effective teaching
- Attitude thoughts
- Economic impact
- Creative thinking
- Life based learning.

Effective teaching has 20 items, an attitude thought has 25 items, the economic impact has 7 items, creative thinking has 8 items and life based learning has 16 items.

6.1. Effective teaching

Effective teaching is the successful transference of knowledge, skill and application around a specific theme. Effective teaching ensures that the surface approach to learning by deeper than student motivated to analyze, develop, create and demonstrate understanding. Students are initiated into learning and maintain engagement during learning in their development as

independent lifelong learners. The statement numbers are from 1-20 on the scale of B.Ed trainee, attribute related effective teaching.

6.2. Attitude thoughts

The necessity for an indigenous impact of smart technology on the educational system as a whole and particularly teachers, pedagogy, ICT receiver and learners in the educational activity to recognize their role in the proactive integration of ICT and pedagogy in a healthy way. It is important to understand the process and determinants in building a positive attitude among teachers about the need of ICT input and ICT skills in education. Doing such a study was not simply interesting, but also a challenging mission. The statement numbers are from 21-45 on the scale, of B.Ed. trainee, attribute related attitude thoughts.

6.3. Economic impact

Economic impact indicates that ICT has a positive impact on growth in developing countries both socially and economically. Furthermore, empowering the benefits of ICT in the developing countries will enhance both education and communications. The statement numbers are from 46-52 on the scale, of B.Ed. trainee, attribute related economic impact.

6.4. Creative thinking

The resignation and sterile negation are the other side of the same coin and then we should look for new, original and innovative ideas that could lay the foundations of an alternative—creative approach to educational issues. ICT, under pedagogical conditions, are the most important tools for teachers and students to develop crucial skills such as cognitive, social and technological as to be able to respond, critically and creatively, to the needs of the new social and economic reality that is, constantly, changing. The statement numbers are from 53-60 on the scale of B.Ed. trainees, attribute related creative thinking.

6.5. Life based learning

This investigation focuses on the need to develop appropriate strategies to face a new teaching role, additionally; the learner's role about ICT gives more benefits towards their knowledge gaining processes. The statement numbers are from 61-76 on the scale of B.Ed. trainees, attribute related life based learning.

Table 2. Dimensions- wise distribution of selected items in ICT Knowledge scale of B.Ed trainees

S.No.	Dimensions	Items	Total
1.	Effective Teaching	1-20	20
2.	Attitude Thoughts	21-45	25
3.	Economic Impact	46-52	7
4.	Creative Thinking	53-60	8
5.	Life based learning	61-76	16
Total			76

VII. RELIABILITY

A reliability coefficient measures the accuracy of a test or measuring instrument obtained by measuring the same individuals twice and computing the correlation of the two sets of measures by the Cronbach's alpha method. The value of reliability from the pilot study is 0.947.

VIII. VALIDITY

Validity is most frequently measured by relying on the knowledge of people who are familiar with the construct being measured. These subject-matter experts are usually provided with access to the measurement tool and are asked to provide feedback on how well each question is measuring the construct in questions. Their feedback is then analyzed and informed decisions can be made about the important questions of effectiveness. Thus, the validity tool was established by the investigator through suggestions, corrections and modifications of the subject experts in the department of education.

IX. SCORING PROCEDURE

The tool consists of 76 statements which reflected the ICT knowledge of B.Ed trainees. The respondents were asked to put a tick (✓) mark against each statement under one of the five responses such as strongly agree, agree, undecided, disagree and strongly disagree. Each item should be scored as 5 for always, 4 for often, 3 for sometimes, 2 for occasionally and 1 for never for favorable responses and 5 for never, 4 for occasionally, 3 for sometimes, 2 for often and 1 for always for unfavorable statements. As a result, the range of score are high from 1 to 374, shows the higher score of ICT knowledge of B.Ed trainees towards teaching.

Table 3. The serial numbers of the positive and negative items in ICT Knowledge of B.Ed trainees are given below.

S.No.	Types of Items	Serial Numbers of the items	Total Items
1.	Positive	1,2,3,4,6,8,9,10,11,12,13,15,16,17,19,21,22,23,24,25,27,28,29,30,32,34,36,37,38,40,42,43,44,50,51,52,53,54,55,56,57,59,60,61,64,65,66,68,70,71,72,73,76.	53
2.	Negative	5,7,14,18,20,26,31,33,35,39,41,45,46,47,48,49,58,62,63,67,69,74,75.	23
Total items			76

X. CONCLUSION

The investigator is hopeful that this scale would be helpful to measure the level of ICT knowledge of B.Ed trainees. As a result, the constructed ICT knowledge tool will be extremely valuable for the investigator to measure the scope of ICT knowledge of B.Ed trainees in their forthcoming teacher's profession.

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