

Construction and Standardisation of Digital Attitude Scale

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ABSTRACT

Education no longer has to be limited by time or place, and technological advancements may make it possible for those with special needs to get the educational opportunities they need. Although openness and positive attitudes toward the use of digital technology in education are not explicitly mentioned in any other frameworks, they appear to be significant dimensions of teachers' digital competence given the significance of perceived digital competence as a predictor of teachers' technology use. The present study was intended to test the Attitude towards Digital tools as attitude plays a key role in exploiting digital tools in the classroom. The investigator created the Attitude towards digital tools of B.Ed trainees scale (ATDTS) after carefully examining the results of a literature search. It was standardized using statistical measures which discussed and displayed in the article. The standardized tool will be used for the doctoral research study undertaken by the investigator

Keywords: Attitude, Construction of Scale, Standardization of Scale, Digital Tools, B.Ed Trainees.

Introduction

Education no longer has to be limited by time or place, and technological advancements may make it possible for those with special needs to get the educational opportunities they need (Alharthi, 2020). The utilization of new technology in the classroom makes education more beneficial for the digital native generation (Alkhudaydi, 2018). The psychological traits of all participants in the educational process and their subjective attitude toward digital educational technologies are associated with many of the challenges associated with the digitalization of education and the development of digital competence, in addition to objective problems, such as technical issues (Novikova, et al., 2022). Technology usage by teachers cannot be disregarded, and digital literacy has become a need for teacher competence (Sangwan, 2021). Although openness and positive attitudes toward the use of digital technology in education are not explicitly mentioned in any other frameworks, they appear to be significant dimensions of teachers' digital competence given the significance of perceived digital competence as a predictor of teachers' technology use (Stemberger & Cotar, 2021).

Literature Review

In order to examine views regarding DET among Russian university students majoring in psychology before the epidemic started and at various phases, Novikova, et al., 2022 conducted an exploratory research. The results indicated that most students in 2020 had positive opinions of their digital learning experiences. About one-third of respondents reported that they had changed their attitudes toward DET during the pandemic, while the remaining one-third reported that their attitudes had remained largely unchanged.

Alharthi (2020) looked at how students felt about using technology in online courses.

This research sought to understand how college students felt about the technology utilized in online courses and how these technologies improved the learning environment.

Alkhudaydi (2018) investigated Saudi Arabian school teachers' attitudes about the use of web-based tools for instruction.

For instructors in higher education, Sangwan, Sangwan, and Punia (2021) created an attitude scale about online teaching and learning.

According to Stemberger and Cotar's research from 2021, Slovenian student teachers' attitudes toward using digital technologies in the classroom, as well as their self-reported levels of proficiency, are all examined, as is the degree to which those attitudes are predictive of those levels of proficiency.

For Sikkim college students, Manger (2017) developed and standardised an Attitude Scale towards E-Learning.

There were 51 components in the tool.

In order to deploy and use technology in the classroom as effectively as possible, Andrew et al. (2018) conducted a survey of student attitudes.

Through the validation of an explanatory model, Martinez et al. (2020) investigated distance education students' attitudes toward technology.

The study's two main goals were to assess the reliability and factorial structure of an instrument that measures attitudes as well as to develop and verify a model that suggests that attitudes are positively influenced by digital competence and frequency of technology usage.

Construction and Tryout of the ATDTS

The investigator created the Attitude towards digital tools of B.Ed trainees scale (ATDTS) after carefully examining the results of a literature search. The literature was carefully examined to identify the dimensions and constructs that make up the attitude of B.Ed. candidates regarding the usage of digital technologies in the classroom. According to many studies, the usage of digital technologies in the classroom may range from lesson preparation to content delivery and assessment. The six dimensions—learning, lesson planning, learning materials preparation, putting instructional techniques into practice, communication, and evaluation—were completed based on these criteria. There were two polarity in the items, six of which were negative and 54 of which were positive. The table below lists the number of elements, broken down by dimension.

Table 1 : Dimensions with No.of Items in ATDTS

S.No	Dimension	No. of items
1.	Learning	11
2.	Preparing lesson plan	10
3.	Preparing learning materials	10
4.	Implementing instructional strategies	8
5.	Communication	7
6.	Evaluation	14
	Total	60

Strongly agree, agree, uncertain, disagree, and strongly disagree were among the answers given for the ATDTS's items. The proposed scale was reviewed for appropriateness and linguistic ambiguity by specialists in the fields of education, ICT, and English language. The 50 B.Ed teacher candidates were then each given one individually. The investigation's goals included making it simple for the respondents to react.

After receiving the necessary approval from the administrators and participants, the developed scale was sent to the respondents. The respondents had an half-hour time to react. They had been given time to answer. Following the completion of the data gathering, the data was coded and put through a statistical analysis. To separate the pertinent elements from the tool, the "t" test was used. The "t" scores that were higher than 1.75 were chosen and kept. The objects were destroyed and discarded if they fell below this mark. After validation using the "t" score, 56 out of the original 60 elements made up the final drafted tool, with 4 items being removed.

Reliability

Research methodologies like reliability and validity are used to evaluate the precision of measuring scales. According to Banigan and Watson (2009), there are many approaches to evaluate reliability (or consistency), which is the stability of a measuring scale and how well it will consistently provide the same findings. Internal consistency of the items was used in this research to examine the dependability across items. With a score of 0.73, the Cronbach alpha is high. The created tool is hence trustworthy. The Spearman Brown Coefficient, which is likewise a high score, is 0.89.

Validity

The extent to which a scale measures what it is designed to assess is known as validity (Bannigan & Watson,2009). For validity purposes, the Pearson correlation was computed. Experts in the area assessed the content validity. Items with a valid Pearson Correlation value of more than 0.174 may be considered (Jijish & Mirunalini,2022). This led to the determination that each item was legitimate. As a result, the scale's products are reliable. The following list of the tool's components:

Learning:

1. Using digital tools to learn is enjoyable.
2. Using digital tools makes me feel relaxed.
3. Using digital tools for learning is a difficult job.
4. One should have a lot of self confidence while using digital tools in learning.
5. Learning through digital tools are waste of time.
6. Digital tools enhance students' learning.
7. Learning through digital tools are boring.
8. Using digital tools in class has minimum effect on students' learning.
9. Using digital tools for learning threatens me.
- 10.Using digital tools increases the quality of learning.
- 11.Digital tools facilitates my learning.

Preparing Lesson Plan:

12. Knowing how to integrate digital tools with learning will help me do well in my career.
- 13.One should like to learn more about using digital tools in classroom.
- 14.It is difficult to learn how to use digital tools in classroom.
- 15.Importance of digital tools in learning should be accepted.
- 16.Digital tools makes effective use of class time.
- 17.Digital tools gives different learning preference for the students.
- 18.Digital tools helps to multigrade learning.
- 19.Digital tools helps to learn new skills.
- 20.Using digital tools strengthens the learning environment.
- 21.Digital tools use gives me satisfaction in learning.

Preparing Learning Material:

- 22.Digital tools helps to do creative activities.
- 23.Students actively participate while using digital tools.
- 24.Digital tools provides enriched learning materials.
- 25.Digital tools ease the use of learning materials in the classroom.
- 26.Teacher should have digital skills in preparing learning materials for the classroom.
- 27.Digital tools has an important place in preparing learning content.
- 28.Books and materials can be used as supplement digital tools use in the classroom.
- 29.Using digital tools for learning is costly.
- 30.Digital tools insists extra time for preparation of learning materials.

31.Digital learning materials enhance attention.

Implementing Instructional Strategies:

- 32.One should like to learn more about new developments in digital tools.
- 33.Using digital tools makes me more productive as a student learner.
- 34.Using digital tools makes it easier to reach instructional resources.
- 35.Learners' poor technical knowledge is a barrier to use digital tools.
- 36.Digital tools helps in stronger registration of content taught.
- 37.Digital tools helps in longer retention of the content.
- 38.There is no time to prepare materials based on digital tools for the classroom.
- 39.One should know to select appropriate media for teaching.

Communication:

- 40.Digital tools communicates through multisensory approach.
- 41.Digital tools usage ensures joyful communication to the students.
- 42.Digital tools helps in easy learner-teacher interaction.
- 43.Digital tools reaches larger audience than traditional methods of teaching.
- 44.Digital tools impedes learners learning styles in a classroom.
- 45.Digital tools recreates the communication.
- 46.Communication through digital tools are fast and accurate.

Evaluation:

- 47.Digital tools improves teacher's self efficacy.
- 48.Digital tools helps teachers in professional development.
- 49.Using digital tools a learner can self assess their learning.
- 50.Digital tools provides positive impacts in the learning outcomes.
- 51.Learners should be given time to experiment with new technologies.
- 52.Digital tools makes the learning faster.
- 53.Digital tools stimulates interest in learning.
- 54.Digital tools provides integrated learning experiences.
- 55.Digital tools provides aesthetic experiences for students.
- 56.Using digital tools students can be evaluated on their performance.
- 57.Digital tools give advanced form of assessment of students work.
- 58.Digital tools promotes communication skills in the students.
- 59.Evaluation of students through digital tools is reliable
- 60.Digital tools limits the learner's errors in assessment.

Results and Discussion

A reliability coefficient of 0.73 and 0.89 was found at the conclusion of the investigation. The final test, which measures how B.Ed. trainees feel about digital tools, consists of 56 questions, 50 of which are positive and 6 of which are negative. This scale may be used to gauge how teacher candidates feel about utilizing or not using digital tools in the classroom, how those technologies have affected their educational experiences, how anxious they are or worried they are about using such resources, and how they see the benefits of doing so. This scale may be highly useful in lesson planning and preparation for teacher candidates, as well as in the redesign of the B.Ed curriculum, by reflecting their attitudes about digital technologies.

Conclusion

Many individuals are afraid of anything new since it may fundamentally alter the way they live or do their jobs. They often lack confidence in new technology in general for a variety of reasons (Hunady, Fendekova & Orviska,2020). But it's clear that the use of modern technology in the classroom has been authorized to improve education and raise student accomplishment in a variety of areas (Alkhudaydi,2018). More

opportunities for teachers to use new technology should be made available on a regular basis to foster a favorable attitude toward digital technologies (Sangwan,Sangwan and Punia,2021). The ability to utilize technology effectively in the teaching and learning process is a 21st-century teacher skill, and the mindset of the teacher is crucial. The current research aids in determining how teacher candidates feel about digital technologies, which encourages their implementation in actual classroom settings.

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