

## Construction and validation of Attitude Towards mobile-phone scale

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### **Abstract**

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*This paper explains the procedure of developing and validating a scale constructed by the authors to measure the attitude towards mobile phone in teaching-learning process of B.Ed. Student- teachers. The scale has been constructed by using likert's method of summation to obtain a four point judgment on each item after critical study related to mobile-phone attitude. The scale includes three dimensions namely, opportunities of mobile phone, forms of change in Education and effects on daily life/profession. The pilot study had 43 items related to all the three dimensions mentioned above. The scale had good validity and reliability.*

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**Key words:** *Attitude towards mobile phone, B. Ed. Student- Teachers.*

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## **Introduction:**

Mobile learning has influenced every aspect of our lives. Regardless of location and occasion, mobile technologies make it possible to communicate. Mobile-learning, realized with mobile technologies, is the type of learning characterized by the usage of wireless technology, through the personal control of the learning time and place, under an autonomy level and limitations determined by the device (Taylor & Francis 2003). Mobile technologies offer significant opportunities both for learners and educators in the process of knowledge society. Mobile technologies have the structure of independency of time and place, so mobile technologies have found themselves as an important use in e-learning supported by mobile technologies (m-learning). Information can be accessible, free from time and place, via mobile technologies which have an opportunity such as wireless communication (Castells 2006).

The recent emergence of mobile learning can provide a new platform for institutions in East Africa to enhance education through mobile learning. Mobile learning provides learners with flexibility and ubiquity to learn anytime, anywhere via mobile devices connected to wireless Internet (Taleb & Sohrabi, 2012; Vosloo, 2012; Wang, Wu, & Wang, 2009). Moreover, it provides a new way to deliver education without installing complex communications infrastructure. According to Hellström (2010), mobile devices have become all-in-one devices that can be carried and used almost anywhere. Consequently, they give learners the opportunity to carry their institution in their own hands (Taleb & Sohrabi, 2012). Even those learners described as “hard-to-reach” learners such as work-based, traveller communities, can easily benefit from courses offered via mobile technologies (Duncan-Howell & Lee, 2007).

Dange Jagannath (2012) found that, the maximum Number of Post graduate students use the mobile phone daily for an hour for personal communication, and Educational communication. The male students’ usage of mobile phone for Educational purpose is more than female students, The Science faculty students’ usage of mobile phone for Educational purpose is more than Arts faculty students and the students of both Arts and Science faculties had the High awareness regarding the usage of mobile phone for Educational purpose.

Dange Jagannath also opines that, For the usage of any technological device, the positive attitude towards the device is very essential and attitude plays an important role in the usage of any method or device for learning.

The Attitude is defined as “an individual’s positive or negative feelings about performing the target behaviour”. Kim et al. (2009) believed user’s attitude towards mobile devices was that the devices are good and entertaining, thus affecting their intention of use believed that attitude is important when participating in activities and that it brings about the intention of use in regard to its users.

More than half the world’s population now has access to mobile phones. While these devices enable spoken communication, many users (especially teenagers and young adults) heavily employ them for sending and receiving written text messages. There is a growing literature on the linguistic features of text messages, but much less is objectively known about user attitudes towards texting (or towards mobile phones in general).

Drawing upon data from a cross-cultural mobile phone Mobile phones (along with the internet, more generally) have facilitated a lifestyle of being ‘always on’ (Baron 2008a), meaning that people have the technological capacity for being continuously available to potential interlocutors, through one or more media (speech, writing, and/or video). While connectivity has a myriad of benefits (from handling emergencies to doing business or chatting with friends), there are also drawbacks to being in ‘perpetual contact’ (Katz and Aakhus 2002). Such drawbacks run the gamut from disrupted sleep to carpal tunnel syndrome (from constant texting), distraction from the cognitive or social task at hand, or clinical addiction. In short, mobile technologies potentially place users in the conflicting position of being at once liberated by and tethered to the device.

In India during the last few years, significant changes are seen in the field of mobile technology and also drastic increase in the number of mobile phone users. Now a day’s mobile has become integral part of life. People not only use mobile phone for talking but for massaging, video, audio, recording etc. (Horrikan, J. 2008).

Before using the mobile device it is very essential to know the attitude towards mobile phones in the teaching and learning situations. As there are no readymade tools to be used for the present research and there is a need to develop an attitude towards mobile phone tool for the

assessment by the student-teachers, the authors decided to construct the new tool based on the selected components.

### **Instrument:**

The first part of the scale is captioned by general information which includes the variables like gender and subject background. The second part of the scale was formed after reviewing many related studies done in the field of attitude towards mobile phone in teaching learning process both in India and in other countries and following dimensions were selected.

- 1. Opportunities of mobile phone:-** The attitude regarding the suitability and appropriateness of opportunities mobile-phone in teaching learning process.
- 2. Forms of Change in Education:-** The attitude regarding the different forms of change in education used for updating the knowledge and easy to use in the class room work.
- 3. Effects on daily life/Profession:-** The attitude towards mobile-phone used to improve the teaching and also collecting the information in relation to teaching and learning.

### **Pilot Study:**

After constructing the Scale of attitude towards mobile phone in teaching-learning process, a pilot test was conducted on random sample of 100 B.Ed. student- teachers in Shimoga district, Karnataka state, India. The test was conducted with a view to find out the reliability and validity of the tools and also to eliminate the ambiguity so that student-teachers do not have any difficulty in responding to the items of the attitude towards of mobile-phone scale. Scoring was done on the four point scale as suggested by Edwards. Total score for each item was calculated, the sum of the item credits represents the individual total score.

**Scoring Procedure:**

The scale was constructed by the use of likert's methods of summation to get a four point Judgment on each item. Against each statement four alternative responses namely "strongly agree, agree, disagree, and strongly disagree" were given. Weights of 4,3,2 and 1 were given for positive statements in the order of attitude. Thus if one chooses 'Strongly agree' response for a statement, s/he gets a score of '4', If one chooses 'agree' response for a statement, s/he gets a score of '3'. If one chooses 'disagree' response for a statement, s/he gets a score of '2'. If one chooses 'strongly disagree' response for a statement, s/he gets a score of '1'.

Weights of 1, 2, 3 and 4 were given for negative statements in the order of attitude. Thus if one chooses 'Strongly agree' response for a statement, s/he gets a score of '1', If one chooses 'agree' response for a statement, s/he gets a score of '2'. If one chooses 'disagree' response for a statement, s/he gets a score of '3'. If one chooses 'strongly disagree' response for a statement, s/he gets a score of '4'. An individual's score in this scale is the sum total of the scores for all the statement by the subject (Summated Ratings).

**Item Analysis:**

Cronbach's Alpha was used to assess the degree of internal consistency among all sets of items, and then the task value was calculated. Items with 'r' values less than 0.30 were rejected, According to (De Vaus 2004) , anything less than 0.30 is a weak correlation for item analysis purposes. There were total 43 items in that the positive items are 33 and negative items were 10. As many as 36 statements having the 'r' value greater than 0.30 were chosen, in order to form the final scale.. The higher the score in this scale grater will be the attitude towards mobile-phone.

**The following table-1 shows the accepted and non accepted items by the Cronbach's Alpha reliability test.**

**Table- 1. Attitude towards mobile phone: Item Wise Analysis.**

Sl. No	Items	Corrected item total correlation	Accepted/ Non Accepted
01.	Mobile phones make college work more enjoyable.	.402	Accepted
02.	I don't think in any way that mobile phones Will be useful in my career.	.216	Non Accepted
03.	I find many aspects of using mobile phone interesting and challenging.	.307	Accepted
04.	Using mobile technology for the calculations makes it easier for me to do more realistic applications.	.419	Accepted
05.	I am very interested in learning about mobile phones.	.314	Accepted
06.	I feel comfortable when using mobile phones.	.417	Accepted
07.	My students will learn better when I teach using mobile phone.	.355	Accepted
08.	Mobile phone environment is quiet and comfortable.	.338	Accepted
09.	Learning to use mobile phones to the maximum is worthwhile.	.368	Accepted
10.	To use mobile phone in learning you have to be highly qualified.	.357	Accepted
11.	Mobile phone is the best, easiest and fastest learning tool.	.515	Accepted
12.	Using the mobile phone has increased my interaction with other students.	.026	Non Accepted
13.	I have less trouble learning how to use a mobile phone than I do learning other things.	.317	Accepted
14.	Learning environment via mobile phones is without problems.	.313	Accepted
15.	Little size of mobile phone facilitates its use in class.	.388	Accepted
16.	I feel frustrated when using mobile phones.	.233	Non Accepted
17.	Learning environment via mobile phone is the same in all educational subjects.	.353	Accepted
18.	I know mobile phones are important but I don't feel I need to use them to learn subject.	.328	Accepted
19.	Using mobile technology is too new and strange to make it worthwhile for learning subjects.	.525	Accepted
20.	I think using mobile phones save time in class.	.573	Accepted
21.	Changing the curriculum to integrate mobile assisted learning is possible.	.530	Accepted
22.	Any student can be accepted in the class room via mobile phone.	.556	Accepted
23.	Lessons are more interesting when teachers use mobile technology.	.464	Accepted
24.	Using mobile phones for reading a lesson is interesting.	.354	Accepted
25.	Using mobile phone for listening lesson is interesting.	.615	Accepted

26.	Mobile phones will stimulate students to respond actively.	.328	Accepted
27.	Teaching any subject through mobile phones will be effective.	.348	Accepted
28.	I concentrate a lot when using mobile phone than any other visual educational multimedia available in class.	.458	Accepted
29.	Designing educational mobile phone for educational environment is a necessity.	.422	Accepted
30.	I feel very confident when it comes to working with mobile phone technology in class.	.403	Accepted
31.	When I have a problem with the mobile phone, I will usually solve it on my own.	.450	Accepted
32.	Item-32	.193	Non Accepted
33.	I believe that mobile phones can really improve my teaching practice.	.408	Accepted
34.	I use mobile phones in many ways in my life.	.541	Accepted
35.	In future I will keep using mobile phone in my teaching.	.562	Accepted
36.	I would like to spend more time using a mobile phone.	-.377	Accepted
37.	I am afraid that continuous work with the mobile phones will harm me physically.	-.362	Accepted
38.	I feel mobile phones are necessary tools in both educational and work settings.	.240	Non Accepted
39.	As a teacher, learning through mobile phone is boring.	.258	Non Accepted
40.	Using mobile phones is a dull activity.	.451	Accepted
41.	Once I start to work with the mobile phone, I find it hard to stop.	.514	Accepted
42.	I am very interested in learning about mobile phones	.221	Non Accepted
43.	Using mobile phone for listening lesson is interesting.	.245	Non Accepted

**Table-2. Attitude towards of mobile phone Item: Total Reliability Statistics.**

Number of Items	Cronbach's Alpha
43	.857

The above Table-2 Shows the Cronbach's alpha reliability score 0.857 for total items in Attitude towards mobile phone tool.

**Table-3. Dimension-Total Statistics.**

No	Dimensions	Cronbach's Alpha.
1	Opportunities Of Mobile Phone	.727
2	Forms of Change In Education	.791
3	Effects On Daily Life-Profession	.821

The above Table -3 Shows dimension wise Cronbach's alpha reliability scores.

**Reliability and Validity:**

The scale had the universe of content as it included statements from all the selected domains of Attitude towards of mobile-phone in teaching-learning process namely opportunities of mobile-phone, change in education, effects on daily life profession. Due weightages was given to all the domains while selecting items. The scale had 43 items representing the universe of content, hence it had face validity. It also had construct validity as items were selected having the 'r' values more than 0.30 (De Vaus 2004), the scale was given to experts in the field of education and they agreed that the items in the scale were relevant to the objective of the study hence it had also content validity. The reliability test was found to be 0.727 for opportunities of mobile-phone, 0.791 forms of Change in Education and 0.821 for the effects on daily life-profession for the dimensions, for the entire items 0.857 by the use of Cronbach's alpha reliability formula.

**Conclusion:**

The scale of attitude towards mobile phone developed and validated by the authors can be used to study the attitude of B. Ed. student teachers towards mobile phone to find out and analyze various factors associated, so that necessary steps can be taken to create environment in which the emphasis can be given to enhance the attitude towards of mobile phone by student teachers of training colleges.



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