Prospects and Challenges of Digital Learning for the B.Ed. Students of Patna University

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Abstract : *With the advent of Akash tab the scenario of ICT in higher education is set to change soon. The teacher education will soon have an option to go digital. The integration of digital learning will help teacher trainees to develop the abilities to use, manage, and understand information technology. In this context the present study is undertaken to infer empirically the prospects and challenges of digital learning and to find out the extent of usage of digital technology by teacher trainees. The study found that the integration of the technology is at a preliminary stage in both Patna Training College and Women's Training College even though the students have acquired some skills on their own. It also found a positive correlation between integration of technology in the institution and readiness of students to adopt them at the Department of Education, Patna Women's College. The study found the language as a significant barrier in usage of digital technology by the students of B.Ed. Yet a good number of them are able to search contents in Hindi but most of them could not type in Hindi. That limits their capability to communicate on net in Hindi. The study also found that a good number of students are aware about the Akash tab and prospective changes in educational scene. A good number of them are ready to adopt the digital format of the contents they use in traditional education. The condition of two leading teacher education institutions of Bihar help us understand the state of technological preparedness of teacher education in Bihar.*

Key words: *ICT, Education, Digital Learning.*

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Introduction :

For all needs and challenges of education the digital technology has emerged as a promising solution. It assists in ensuring personalization of education and increasing intimacy in dialogue between teacher/tutor/expert/guide and learner. Today's classroom teachers need to be prepared to provide technology-supported learning opportunities for their students. Teachers need to be prepared to empower students with the advantages technology can bring. The expansion of digital education is not a matter of individual endeavours because the initial cost for setting up the infrastructure for digital learning is very high. This is one of the main reasons for digital divide. This concern has induced the government of India to come up with National Mission on Education through Information and Communication Technology. The mission aims at mitigating the digital divide by creating a system of identification and nurturing of talent and lifelong learning.

"For bridging the digital divide and empowering teachers/learners to harness information and communication technologies for their empowerment through knowledge, the need of the hour is to provide digital literacy to teaching learning community in Higher Education. The aim has to be that this community should be able to operate the computer or other devices and connect to the knowledge network." (NMEICT, 2009, 23-24) The ambitious plan of Akash Tab has been launched to address these concerns. This device was developed as part of the country's aim to link 25,000 colleges and 400 universities in an e-learning program.

It is in this context that the present study is undertaken to infer empirically the prospects and challenges of digital learning and to find out the extent of usage of digital technology by teacher trainees.

A number of research studies have been conducted during the last few years with regard to prospects and challenges of digital technology in education in general and for teacher trainees. Kasinathan (2009), in *ICTs programmes in school education* points out that the digital medium has the capacity to allow local knowledge construction and also supports all the modes (text, audio, and video). Hence its potential for revolutionizing teaching learning needs to be explored. However, this exploration needs to be firmly grounded in both educational aims/philosophies as well as educational contexts and anchored by educationists to be successful. Barret's (2009) in *ICT and Organizational Change: Introduction to the Special Issue, the international experience of using ICT* that infrastructure, trained teachers, e-literacy or stand-alone computer lessons though necessary are not sufficient. Integrating ICT tools into the curriculum and tailoring pedagogy according to the social environment are necessary for achieving qualitative improvements in learning.

Bottino (2004) in *"The evolution of ICT-based learning environments: which perspectives for the school of the future?"* mentions that the use of ICT can improve performance, teaching, administration, and develop relevant skills in the disadvantaged communities. It also improves the quality of education by facilitating learning by doing, real time conversation, delayed time conversation, directed instruction, self-learning, problem solving, information seeking and analysis, and critical thinking, as well as the ability to communicate, collaborate and learn.

Objectives of the study :

The following objectives were proposed for achievement in this study:

1. To find out whether the integration of technology in teacher training institutions influence the teacher trainees' readiness for using digital resources.

2. To find out whether the Hindi medium students use the digital contents as frequently as the English medium students.

3. To find out how many students are ready to opt for digital resources especially in context of the Akash Tablet.

In this study *digital learning* is defined as the uses of digital technology to strengthen the learning experiences of the students. This learning practice may include using online content and courses, applications of technology in the classroom, learning platforms, use of digital format of books and other learning materials.

The phrase *use or readiness for using digital technology* is conceived as the use of hardware i.e. computer and other devices, use of internet on mobile, CDs, DVDs, pen drives, and tab/pads as well as software operation skills like typing surfing, creating digital contents. *Integration of technology in institution* is defined as the usage of the technology in teaching learning practices of the institution. The infrastructural support for the digital technologies like computer lab and internet facilities and the usages of digital technologies in class room practices have been reported by the respondents in the questionnaire.

Delimitation of the study :

The terms prospects and challenges are very broad in meaning. This study uses the terms in the limited sense of readiness of the B.Ed. students for using digital technology and the role of teacher education institutions play in encouraging the students in using digital technology. The study chose no separate measures to evaluate the challenges. Hence the challenges here are perceived as the **lack of the skills in operating the digital technology, lower level of integration of digital technology in teacher education institutions.**

Method of the study :

Population and sample of the Study

All the students of B.Ed. belonging to the three institutions of Patna University providing Bachelor of Education course for the academic session 2012-2013 constitute the population of the study.

The investigators intend to get maximum responses for the study as the population size was not too big. But due to some restrictions, only 161 responses could be collected. The investor used all the responses they could get from the three teacher education institutions of Patna University.

Table 1: Break-up of the sample

Name of The Institution	Total No. of the Students	Number of Samples Collected
Dept. of Education, PWC	100	90
Patna Training College	90	26
Women's Training College	120	45
Total	310	161

Limitations of the collected data

(i) The ratio of the sample from each of institutions was around 4:2:1.

(ii) The male population was under-represented.

(iii) Given the nature of the B.Ed. Course the age variance was high in range (between 19 - 39 years).

Tools of the study

For the collection of relevant data, a self-made questionnaire consisting of 57 questions divided in 6 groups were administered upon.

Data analysis and interpretation :

General Observations

The students of B.Ed. of Patna University use a number of digital devices:

It can be observed in Figure 1 that most of the students could use the key digital devices. But in Figure 2 we see that only 94 per cent are confident to operate them. The other key skills they possess were typing in English, use of Internet and operate CDs and DVDs. The students of B.Ed. had several software skills like typing, using internet, playing CDs and DVDs also.
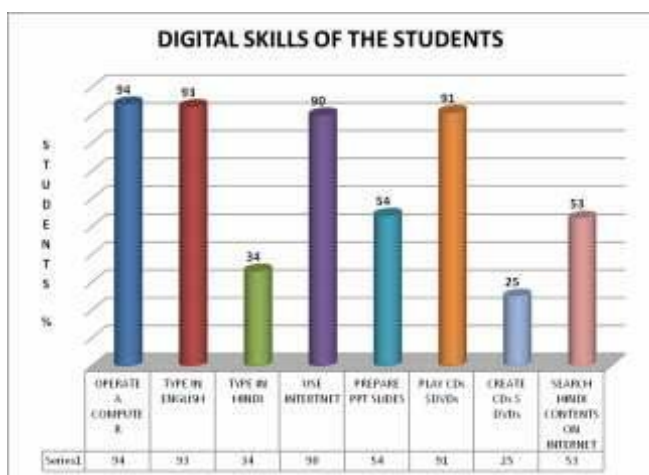

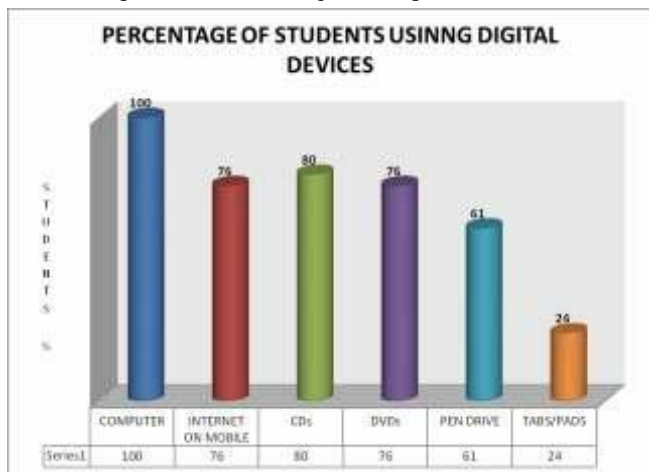**Figure 1: The usage of digital devices**

Figure 2 : Software skills of the students

Figure 3 depicts the general purposes of using computer. The main purposes for using computers were surfing course content, viewing CDs and DVDs, preparing assignments and typing.
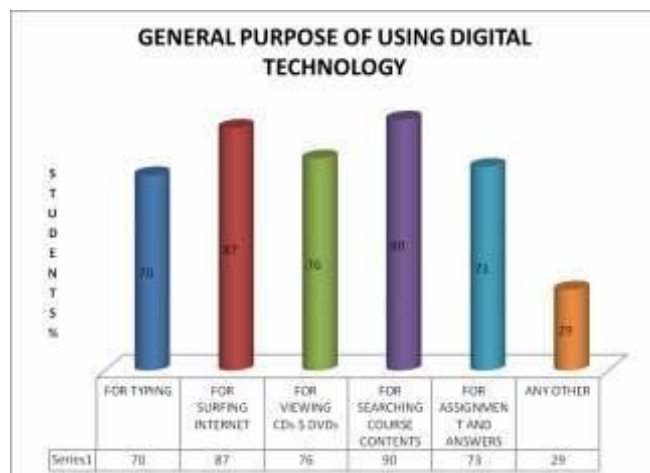

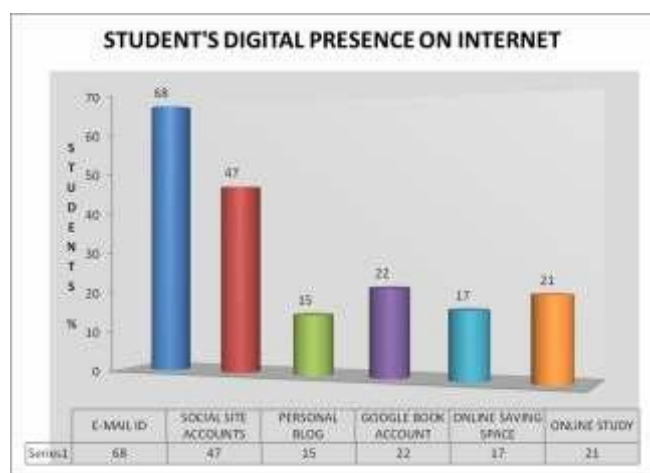**Figure 3: Purpose of using computers**

Figure 4: Student's digital presence on Internet

But their integration in digital technology is not deep enough as only 68 per cent of the students possess e-mail ids that is the basic need for online communication while 47 percent have accounts on social sites.

Objective: 1

To find out whether the integration of technology in teacher training institutions influence the teacher trainees' readiness for using digital resources

The first objective of the study was to find out whether the integration of technology in teacher training institution influences the teacher trainees readiness for using digital resources. The results can be seen at the scatter plot below.
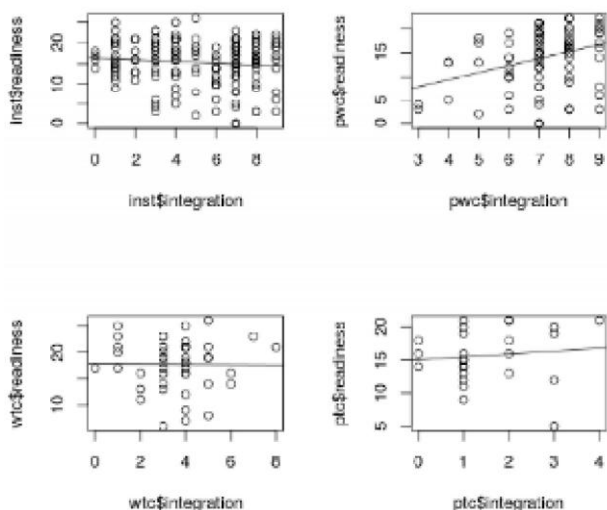
264

Figure 5: Plot Matrix depicting overall and institution wise correlation between integration of digital technology in educational institutions and the usage of digital technology by the students. (From right up: Overall, PWC, WTC, PTC)

The first plot (in Fig-5) left above shows the almost nil slop. This represents no correlation between the digital usage and the integration of digital technology at institutional level in overall data. The right-above plot represents a positive correlation at the Department of Education, Patna Women's College, but this relation is not strong. The lower-left plot represents almost nil correlation at Women's Training College. There is a slightly positive correlation at the Patna Training College.

Thus the relationship between the integration of digital technology is difficult to establish with the given data. Since the skills of digital technologies can be learnt from several sources so the theoretical relation between the two cannot be established.

Objective: 2

To find out whether the Hindi medium students use the digital contents as frequently as the English medium students

The mean value of the cumulative individual scores for using digital technology by the English medium students is higher than the Hindi medium students. The difference of usage among the Hindi medium and English medium students is not too surprising as there is much less digital content available in Hindi on internet. Hence a Hindi medium student is less likely to find the content of his interest in Hindi. On the other hand the two mediums have been like two poles for some – joint internally and separate externally.

Table 2: Usage of Digital technology by Hindi and English medium students

| Description	Descriptive	Statistics
Description of the usage of digital technology by Hindi medium students of B.Ed. (Total students = 85)	Median 15.00	Mean 13.92
Description of the usage of digital technology by English medium students of B.Ed. (Total students = 74)	Median 17.00	Mean 17.30

Hence the language is a significant barrier in usage of digital technology by the students of B.Ed. Yet as we can see in Figure 2 that a good number of them are able to search contents (53%) in Hindi but most of them could not type in Hindi (34%). This limits their capability to communicate on net in Hindi.

Objective : 3

To find out how many students are ready to opt for digital resources especially in context of the Akash Tablet

The most exciting thing for the investigators in the study was to evaluate acceptability of Akash tablet and the associated assistive technologies of teaching learning. A set of queries sought about awareness of, attitude about and preferences for

digital contents and Akash estimates that 76 per cent of B.Ed. students were aware of the Akash tab and 71 per cent thought that it would be helpful for them for their B.Ed. course. (Fig. 8)
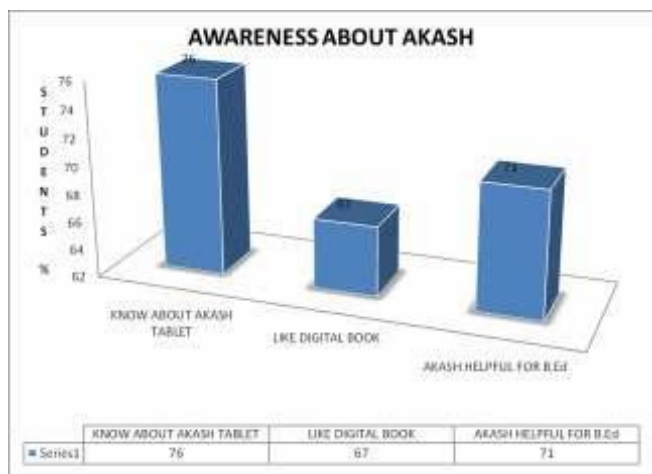
A plot Chart (Fig. - 7) is drawn to view the correlation between the awareness of the Akash tab and the usage of the digital technology. The correlation is positive (3.9). This means that the usage of digital technology does influence the awareness about the Akash tab but there is a large number of people who are passive to it despite their digital skills.
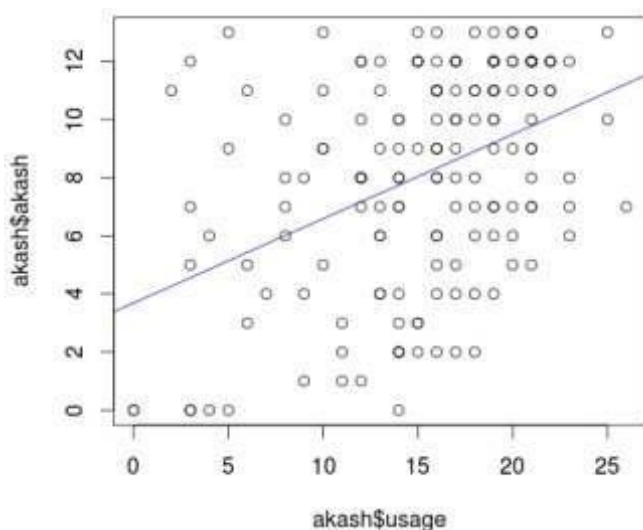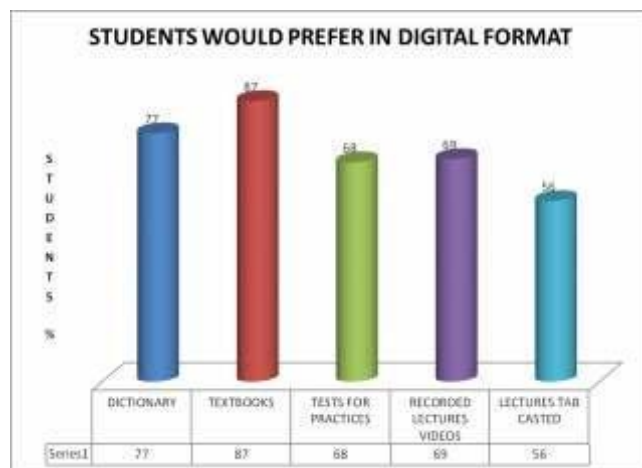

Figure 7 : The plot chart depicting the correlation between the awareness about Akash and the readiness for usage of digital technology

Figures 8 : Students would prefer in digital format

Most of the students would prefer to use textbooks, dictionary in digital format (Fig.-8).

Conclusion and Discussion :

The prospective teachers are going to face a digital society. This study has tried to shed some light on the digital skills of the students of the teacher education institutions of Patna University. The study also tried to relate the role of teacher education institution in adoption of digital skills by the students.

The study found that the integration of the technology is at a preliminary stage in both Patna Training College and Women's Training College whereas the students have acquired some skills on their own. It also found a positive correlation in the Department of Education.

The study found the language as a significant barrier in usage of digital technology by the students of B.Ed. Yet a good number of them are able to search contents in Hindi but most of them could not type in Hindi. This limits their capability to communicate on net in Hindi.

The study also found that a good number of students are aware of the Akash tab and prospective changes in educational scene. They are ready to adopt the digital format of the contents they use in traditional education.

Implications for Teacher Training Institutions :

This study has tried to explore an emerging educational scenario. Some serious observations can be made:

- The role of the teacher education institutions for encouraging the use of digital technologies is important. Because only the integration of the digital learning in the teaching learning process can guarantee the use of full potential of the digital technology.

- The production of Hindi contents should be encouraged. Students should be taught to type Hindi in Unicode fonts for better on line communication.

- Akash tab should be accompanied with exemplars for its integration in teaching learning process in various disciplines.

- Akash tab should have contents in Hindi and other Indian languages.

Further Prospects of Studies :

This study is just gives a prelude to the studies possible in the field of the digital education in context of digital education. Here is a list of the further studies in the field:

1. The attitude of the students towards digital learning should be explored for further study of the readiness for adoption of digital technology.

2. Aptitude for digital technology is also related to a number of factors that has become a part of habit.

3. Integration of digital technology in teaching-learning process should be explored for the possibility and challenges.

4. Teacher's attitudes towards the adoption of the digital technology in the teaching-learning could be explored especially in the context of the perceived threat of technology replacing the teacher.

Limitations of the study :

There are certain limitations to the conclusions of this study.

1. This study is set in institutions based in Patna, which is a city. Hence the conclusions of the studies may not be valid for the institutions situated in peripheral areas.

2. The tool for the study is a self-reporting questionnaire which may not be accurate at times

3. The digital skill of the respondent is taken as the face value i.e. it could not be cross checked if their claim is true or not.

References :

Bottino, R. M. (2004), The evolution of ICT-based learning environments: which perspectives for the school of the future?. *British Journal of Educational Technology,* 35: 553–567. doi: 10.1111/j.0007-1013.2004.00413.x

Das Gupta, Chirashree & KPN, Haridas. (2012). Role of ICT in Improving the Quality of School Education in Bihar. London : International Growth Centre.

Kasinathan, G. (2009). ICTs in School Education - Outsourced versus Integrated Approach. India: IT for Change.

National Mission on Education through Information and Communication Technology. (2009). http://www.sakshat.ac.in/Document/Missiond ocument.pdf