*Educational Quest: An Int. J. of Education and Applied Social Sciences:* Vol. 13, No. 01, pp. 63-66, April 2022
**DOI:** 10.30954/2230-7311.1.2022.11
**Peer Reviewed Journal**

# Digital Pedagogy in Teacher Education: A Need of the Hour

Smriti Rekha Satapathy

Department of Education, Regional Institute of Education (NCERT), Bhubaneswar, Odisha, India

Corresponding author: smritirekha2010@gmail.com

**Received:** 17-01-2022 **Revised:** 26-03-2022 **Accepted:** 07-04-2022

**ABSTRACT**

Digital pedagogy can be defined as a use of electronic elements to enhance or to change experience of teacher education. The simple use of PowerPoint in the classroom to the Khan Academy's exhortation to "flip the classroom," and the massive growth of Open Online Courses (MOOCs), all are included in digital pedagogy. Apart from these, digital pedagogy also include blogging assignments, the use of social media in the classroom, "forking" syllabi with GitHub, and engaging students to use digital tools to test ideas. Therefore, digital pedagogy is no less than an attempt to use technology for changing teaching and learning in a variety of ways. Academic interest in digital pedagogy has taken its own toll. Digital pedagogy centred journals such as Hybrid Pedagogy and the Journal of Interactive Technology and Pedagogy was launched in 2011. Paul Fyfe argued that a simple incorporation of a tool in a lecture, without any reflection on how the lecture from itself should evolve, is pretty much the same as a lecture without tool. This paper tries to define digital pedagogy in a broad way.

**Keywords**: Digital pedagogy, Technology, ICT, Teacher education

Digital pedagogy works in a constructive approach, in which students construct their own knowledge in a social context. Therefore, it includes several axiomatic changes to traditional pedagogy. However, it goes beyond that to include teaching about and for digital technology for learning. It not only the co-construction of knowledge but also is a planning for learning which is less content than problem-solving based.

According to Kent & Holdway, (2009), since digital pedagogy present knowledge as problematic rather than fixed, it promotes higher order thinking skills among the students as they move from remembering content to gaining a deep understanding of concepts. According to Luckin *et al.* (2009), digital pedagogy develops the skills of critical analysis, meta cognition and reflection, often through creation, editing and publishing online. Kent & Holdway, (2009) also reviewed that digital pedagogies can include Web 2.0 technology for social networking, with the use of blogs, wikis, i-phones and i-pads for learning by the way of which digital pedagogies help to promote connectedness to the wider world.

Since all the students do not have navigation skills and they do not know how to use the whole range of ICT completely, teachers are required to demonstrate how to identify, select, analyse and use ICT information so that students could develop critical digital literacy (Asselin & Moaveri, 2011). Teachers should also realize that there will be fundamental changes to activities, rather than using old activities on new media. Many research studies have been conducted so far with regard to the attitude of teachers towards use and interactions of technology. These studies have shown the importance of attitudes for learning to use technologies (Cox, Rhodes & Hall, 1988;

**How to cite this article:** Satapathy, S.R. (2022). Digital Pedagogy in Teacher Education: A Need of the Hour. *Educational Quest: An Int. J. Edu. Appl. Soc. Sci.*, **13**(01): 63-66.

**Source of Support:** None; **Conflict of Interest:** None

Davidson & Ritchie, 1994; Hannaford, 1988; Kay, 1990). These studies were further supported by Bandalos & Benson, (1990); Dupagne & Krendl, (1992); Francis-Pelton & Pelton, (1996); Loyd & Gressard, (1984a); Mowrer-Popiel, Pollard, & Pollard, (1994); Office of Technology Assessment, (1995). Several studies found that only well-planned instruction may improve individual's attitudes towards computers (Kluever, Lam).

### 1. The various skills and competencies to be developed on the part of student teachers for using digital pedagogy

1. Student teachers should make a habit of surfing the Internet and locating useful information from the Internet for the development of lesson plans.
2. They should develop lessons plans incorporating student use of technology in the learning process.
3. They should evaluate and select appropriate software for a particular subject and per student's needs.
4. They should generate printed documents like student assignments, newsletters, communication, etc. utilizing a variety of applications software like word processing and desktop publishing.
5. They can manage student data; using data management tools for efficiently managing learning.
6. They can even use technology to gather, organize, and report information about student performance like Excel and Access for database management.
7. They can also involve themselves for developing tools to evaluate technology-based student projects including multimedia, word processing, database, spread sheet, PowerPoint, desktop publishing, and Internet/telecommunications.
8. Internet can be used to support professional development including locating Professional organizations, communicating with other teachers electronically, and participating in on-line professional development workshops and seminars.
9. They can use technology for developing assignments and project work for students; giving them broader and deeper knowledge in a field of study; developing critical thinking and infusing creativity among students.

### 2. Techno-Pedagogy: A Skill

Student Teachers must understand their role in technologically-oriented classrooms. That's why knowledge about technology is important in itself, but not as a separate and unrelated body of knowledge away from the context of teaching. It is not only about what technology can do, but perhaps what technology can do for them as teachers.

There are three areas of knowledge in Techno-Pedagogy, namely: content, pedagogy, and technology. The subject matter that is to be taught is known as Content (C). Modern technologies such as computer, Internet, digital video and commonplace technologies including overhead projectors, blackboards, and books are all included in Technology (T).

The collected practices, processes, strategies, procedures, and methods of teaching and learning are known as Pedagogy (P). Pedagogy also includes knowledge about the aims of instruction, assessment, and student learning.

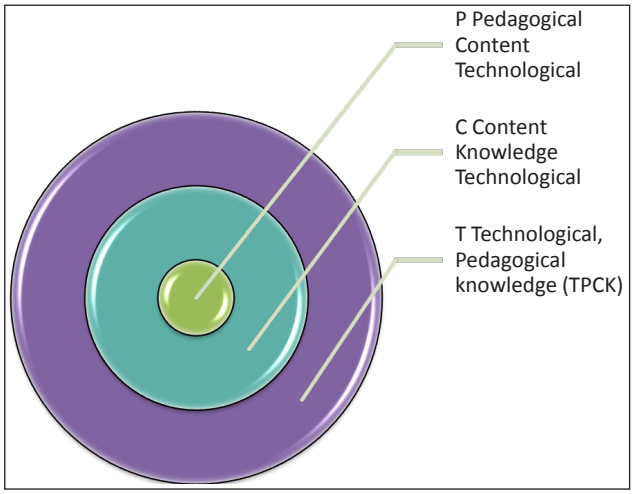


**Fig. 1**

Technology integration entails the understanding and negotiating of the relationships among the aforementioned three components i.e. Content, Technology and Pedagogy. According to TPCK framework, good teaching is not simply adding

technology to the existing teaching and content domain rather; the introduction of technology causes the representation of new concepts and requires developing sensitivity to the dynamic, transactional relationship between all three components (Koehler, M.J. and Mishap, P. 2005).

Technology integration should be chosen depending upon the nature of content, scope of content, and level of students. Technology as an aid enhances the process of teaching- learning and helps in achieving higher level objectives.

## 3. Approaches to ICT integration in Teacher Education

Use of ICT within teacher training programs around the world is being approached in a number of different manners with various degrees of success. These approaches were subsequently described, refined and merged into following approaches:

1. ICT skills development approach: Providing training in use of ICT in general should be emphasized. Student teachers should be trained and are expected to be skilled users of ICT for their daily activities. Knowledge about various software, hardware and their use in educational process is necessary to be provided to the student teachers.
2. ICT pedagogy approach: Integrating ICT skills in a respective subject is very important for the student teachers in order to make teaching and learning more effective. As per the principles of constructivism, teachers need to design lessons and activities that centre on the use of ICT tools that will foster the attainment of learning outcomes. This approach helps in enhancing ICT literary skills among the student teachers. The pedagogy allows student teachers to further develop and maintain these skills in the context of designing classroom based resources and teaching learning environment.
3. Subject-specific approach: By embedding ICT into one's own subject area, student teachers are not only making students expose to new and innovative ways of learning but are also providing them with a practical understanding of use of ICT in teaching learning process. Therefore, it can be said that ICT is not an 'add on' but an integral tool that is accessed by teachers and students across a wide range of the curricula.
4. Practice driven approach: In this approach, student teachers are provided with an exposure to the use of ICT in practical aspects of teacher training. They should be trained to use ICT on developing lessons and assignments. It may help them further in their work fields because using ICT and implementing it in their work experience at various levels provides students an opportunity to access the facilities available by effectively using their own skills.

Therefore, ICT in teacher training can take many forms.


**Fig. 2**

Integration of all approaches can lead to develop proper attributes among prospective teachers. There is a need for the joint efforts of educators and prospective teachers in implementing and sharpening ICT skills.

## CONCLUSION

The concerned paper focussed on digital pedagogy and its utilization in teacher education to develop skills and appropriate knowledge among trainee teachers. They should know the use and integration of the correct technology in an appropriate manner. It is the need of the hour that every teacher should know how to use technology, pedagogy and subject area content effectively in their daily classroom teaching. It should be clear to everyone around the globe that merely introducing technology to the educational process is not enough rather one

must ensure technological integration because technology by itself will not lead to change. That's why attitude and self-efficacy towards technology play an important role since it is the way in which technological integration has the potential to bring change in the education process. Being skilled in the usage of educational technology implies going beyond mere competence with the latest tools. It helps in developing an understanding of the complex web of relationships among users, technologies, practices, and tools.

## REFERENCES


Ashton, P. 1985. Motivation and the teacher's sense of efficacy. *In:* C. Ames, & R. Ames (Eds.), Research on motivation in education, **2**,141-171. Orlando, FL: Academic Press Inc.

Bandalos, D. and Benson, J. 1990. "Testing the factor structure invariance of a computer attitude scale over two grouping conditions", *Educational Psychology Measurement*, **50**: 49-60.

Bandura, A. 1982. "Self-efficacy mechanisms in human agency." *American Psychologist*, **37:** 122-147.

Bandura, A. 1986. *Social foundations of thought and action: A social-cognitive view*. Englewood Cliffs, NJ: Prentice-Hall.

Bandura, A. and Adama, N.E. 1997. Analysis of self-efficacy theory of behavioural change, *Cognitive Therapy and Research*, **1**: 287-308.

Bandura, A., Adams, N.E. and Beyer, J. 1977. Cognitive processes mediating behavioural change, *Journal of Personality and Social Psychology,* **35**: 125-139.

Chu, P.C. and Spires, E.E. 1991. Validating the computer anxiety rating scale: Effects of cognitive style and computer courses on computer anxiety, *Computers in Human Behavior,* **7**: 7-21.

Collis, B. and Jung, I.S. 2003. Uses of information and communication technologies in teacher education. *In:* B. Robinson & C.Latchem (Eds.), Teacher education through open and distance learning, London: Routledge Falmer, 171-192.

Cox, M.J, Rhodes, V. and Hall, J. 1988. The use of Computer Assisted Learning in primary schools: some factors affecting the uptake. *Computers and Education,* **12**(1): 173-178.

Davidson, G.V. and Ritchie, S.D. 1994. How do attitudes of parents, teachers, and students affect the integration of technology into schools?: A case study. Presented at the National Convention of the Association for the Educational Communications and Technology 16th Nashville, TN, (Eric Document Reproduction Service No. ED. 373 710).

Delcourt, M.A.B. and Kinzie, M.B. 1993. "Computer Technologies In Teacher Education: The Measurement Of Attitudes And Self-Efficacy." *Journal of Research and Development in Education*, **27**(1). 35-41.

Dupange, M. and Krendl, K.A. 1992. Teachers' attitude towards computers: A review of literature, *Journal of Research on Computing in Education,* **24**(3): 420-429.

Ertmer, P.A. and Newby, T.J. 1993. Behaviorism, cognitivim, constructivism: comparing critical features from an instructional design perspective, *Performance Improvement Quarterly,* **6**(4): 50-72.

Ertmer, P.A., Evenbeck, E., Cennamo, K.S. and Lehman, J.D. 1994. Enhancing self-efficacy for computer technologies through the use of positive classroom experiences. *Educational Technology Research and Development*, **42**: 45-62.

Francis-Pelton, L. and Pelton, T.W. 1996. Building attitudes: How a technology course affects pre-service teachers' attitudes about technology. [Online]: http://www.math.byu.edu/~lfrancis/tim's page/attitudesite.html

Gist, M.E., Schwoerer, C. and Rosen, B. 1989. Effects of alternative training methods on self-efficacy and performance in computer software training. *Journal of Applied Psychology,* **74**(6): 884-891.

Hakkinen, P. 1994. Changes in computer anxiety in a required computer course. *Journal of Research on Computing in Education,* **27**(2): 141-153.

Hannaford, M.E. 1988. Teacher attitudes towards computer use in the classroom. Paper presented at the Annual Pacific Northwest Research and Evaluation Conference, Washington Educational Research Association, Seattle, WA.

Key, R.H. 1990. Predicting student teacher commiment to the use of computers, *Journal of Educational Computing Research,* **6**: 299-309.