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R. Jayakumar
Assistant Professor
Vivekanandha College of Education, Lawspet, Puducherry - 605 008. India.

R. Krishnakumar
Professor,
Department of Education
Annamalai University, India

Correspondence:
R. Jayakumar
Assistant Professor,
Vivekanandha College of Education, Lawspet, Puducherry - 605 008. India.

Meta-cognitive skills: The development of technopedagogical skills of teachers

R. Jayakumar, R. Krishnakumar

Abstract
Meta-cognitive skills perform better on exams and complete work more efficiently they use the right tool for the job, and they modify learning strategies as needed, identifying blocks to learning and changing tools or strategies to ensure goal attainment. Because Meta-cognition plays a critical role in successful learning, it is imperative that instructors help learners develop meta-cognitively. Proper planning and objectives, monitoring one's improvement, and adapting as needed for effective learning. All of these activities are meta-cognitive in nature. By teaching students these skills all of which can be learned we can improve student learning. There are three critical steps to teaching meta-cognition: Teaching students that their ability to learn is mutable teaching planning and goal-setting. The students are ample opportunities to practice focusing their learning and adapting as needed.

Keywords: Effective learning, cognitive technology skills.

1. Introduction
Meta-cognitive skills perform better on exams and complete work more efficiently they use the right tool for the job, and they modify learning strategies as needed, identifying blocks to learning and changing tools or strategies to ensure goal attainment. Because Meta cognition plays a critical role in successful learning, it is imperative that instructors help learners develop meta-cognitively. We can improve the students learning effective manner through our prefixed curriculum with constructive way. All the activities are meta-cognitive in nature. By teaching students these skills all of which can be learned There are three critical steps to teaching meta-cognition: Teaching students that their ability to learn is mutable, Teaching planning and goal-setting students best opportunities to practice facilitating their learning and adapting as important.

2. Teach Meta-cognitive Skills
Research shows that meta-cognitive skills can be taught to students to improve their learning (Nietfeld & Shraw, 2002; Thiede, Anderson, & Therriault, 2003). An understanding requires both cognitive and meta-cognitive elements constructive ideas of learning environment. Learners construct knowledge using cognitive strategies, and they guide, regulate, and evaluate their learning using meta-cognitive strategies. It is thinking about thinking, this use of meta-cognitive strategies, that real learning occurs. Usage meta-cognitive strategies, they gain confidence and become more individual as learners. Individuals with well-developed meta-cognitive skills can think through a problem or approach a learning task, select appropriate strategies, and make decisions about a course of action to resolve the problem or successfully perform the task. Most of the person often thinks about their own thinking, taking time to think about mistakes to right learning. So that teaching methodologies are to take part in meta-cognitive challenges about self correct and lifelong learning process.

3. Transition Skills towards e-Learning
E-Learning and information-based technologies are all based on the sharing of information and knowledge through the Internet or other communications systems, collectively known as Information and Communications Technologies. Access to communications technologies is, thus critical for e-learning and related educational and economic success. Oyelaran- Oyeyinka and Lal (2005) who has rightly pointed out the low level of facilities and skills are followings.

Sl. No	Transition Skills towards e-learning
1	Low income
2	Low knowledge
3	Physical Infrastructure

The rapid rate of suitable of mobile phone technology among even rural and poor areas, for example, has been a surprise. Although the mobile sector is important, other communications technologies, such as broadband Internet, cloud computing, computers and the host of related information products and services commonly available in developed countries, have thus far lagged.

Most probably many countries are now implementing the technology is ambitious strategic frameworks to support their human capital initiatives. These are often focused on areas such as social inclusion, the health of school age children, nutritional support, programs to support girl education, and modernization of the curriculum including technology skills. The challenges existing in schools, however, could restrict the e-learning technologies' effectiveness and particularly their sustainability in schools over the long term. The following section briefly describes the challenges that many educational programs are facing and how e-learning and ICT initiatives are expanding despite these. Indeed, e-learning and new technologies are being incorporated in some cases to address these learning challenges.

4. Development in Educational Systems

The development of educational attainment and other aspects of human capital development required an increasingly knowledge based global economy. The quality of education is not where it needs to be either with outdated curriculum. Meanwhile, in middle-income economies, quality and quantity of secondary and tertiary graduates are among the driving factors behind economic and social performance (Verspoor 2008). The majority of the population is either rural based, or recent migrants to urban areas. The schools need to improve educational attainment of their citizens by transitioning their educational system. Schools have reacted by having larger class sizes, by rotating teachers (having classes work without teachers), and by sharing trained specialty teachers between schools (teachers travel between schools). Less number of trained specialty teacher are particularly severe in subjects such as math, physics, chemistry, science and English.

5. Skills of teachers

Three components of this program that development of techno-pedagogically skilled teachers:

(a) meta-teaching,
(b) technology exposure, and
(c) critical reflection

According to Beaudin and Hadden (2004) [3] has classified three components follows.

The use technology effectively is a major area of concern to prepare for educational purposes. Effective technologies are use includes as linking curriculum outcomes with various technologies, establishing a learning context of discovery and process in the use of new technology, collaborating with others both face-to-face and virtually to achieve learning outcomes, simulating real-world environments, and assessing outcomes. Successful programs must also engage in meta-teaching and process-oriented instruction to foster effective technology use in their students. One important and significant shortcoming of faculty modeling is that the methods of integrating technology at the university level, the methods most familiar to the majority of pre-service teachers are quite different than the methods for teaching in a K-12 system.

A focus on the process involves the premise that there are different forms of knowledge that can be fostered by and through the instructional use of technology. For example, cognitive and developmental psychologists have examined types of knowledge that change as learners advance from being intermediate learners to advanced learners; According to (Paris, Lipson, and Wixson 1983) has classified as three major types, such as

a) Declarative knowledge includes both ideas related to structure and goals as well as information helpful in developing goals and changing task conditions. The following assertion expresses an example of such knowledge: "I know that my comprehension goals differ when reading newspapers and textbooks".
b) In contrast, procedural knowledge includes ideas related to how certain actions are executed, and
c) Conditional knowledge includes strategic ideas about when and why to apply various actions in different contexts (Paris, Lipson, and Wixson 1983, 303; Pressley and Harris 1990). A process-oriented focus to technology integration in teacher education encompasses all three forms of knowledge such that pre-service teachers not only gain substantial exposure to and proficiency with technology but also discover effective and efficient strategies for teaching and learning through technology. Through the use of meta-teaching, pre-service teachers become aware that teaching with technology is about learning both teacher learning and student learning. The approach to meta-teaching that is most fitting to this work is Timpson's description of his running conversation about teaching and learning where all of us the instructor, the students, and I engaged in a collective and complex meta-cognitive task of thinking about instruction and how to make improvements while in the midst of it. We continually asked pre-service teachers to think about technology and what was happening within their online classroom. In addition, we asked them to consider how the activities would change in their own classroom, and as they did this, they learned how to learn and how to teach with technology as they developed into a community of learners (Brown, Campione, and Day 1981) [6]. The learning process highlighted by fundamental process that was developed within the course. The questions raised within this process are in no way intended to be exhaustive; rather, the process was intended to be a starting point for pre service teachers to begin to think about what they are doing when learning about technology for teaching and learning.

6. Technology Skills usage

Then the students were asked to think about the ways in which the technology could be used in classrooms and to make informed judgments about its advantages and disadvantages for teaching and learning. The usage of online materials is to learn more about the technology as part of becoming informed about it learning possibilities. This process formed the explicit structure of the course. Students were encouraged to see that they could use this structure when they encountered any new technology and to understand that they could use technology to learn about technology. We have heard the argument that effective technology integration should begin with the curriculum area such as social studies or science and move to finding technologies such as cloud computing or digital

imaging that are appropriate for the given curriculum. This implies that educators should use technology to assist in effectively and efficiently achieving curriculum objectives. It is important to understand the context of the experiences the questions intended to be exhaustive.

7. Technology Exposure

The technology exposure something far more than just having students develop skills in a particular technology. New technology can exposure includes all of the following: integration methods, lab protocol, developing technology skills, and learning how to gather tutorials and learning materials from the Internet. We hoped that virtual field trips would be an effective method to assist in exposing teachers to real-life or real-classroom technology integration. In the virtual field trip component of the course, we intended to present video clips of various technology-rich classroom settings. Questions related to the video clips would be the catalyst for the teachers to reflect and discuss collaboratively what they were watching. Virtual field trips have the potential to target two major areas of common concern in teacher technology preparation.

8. Critical Reflection

Critical reflection is thinking about what one does when one teaches with technology, requiring reflection on one's teaching and on the technology used. Being critical about technology integration is a time-consuming and difficult task for teachers.

9. Technology enabled meta-teaching

The teachers follow the process of learning to teach with technology they learn how we expect them to teach. For example, the students to read a few online articles on the use of graphic organizers in the classroom, including articles that support the technology and those that criticize it. This sampling of articles gives the students an idea of what graphic organizers are about. Next, students are asked to download a trial version of Inspiration, a graphic organizer software program. The online module exposes students to various examples as they link to, and view, several completed Inspiration documents. When prompted, students then link to several online resources providing exemplars of various subject specific lessons that have integrated Inspiration to demonstrate understanding of the value of concept mapping software as a cognitive tool for developing structural knowledge. The students create a simple Inspiration file to brainstorm uses of technology in their subject area.

After the students complete the assignment, they think about what they did: how they learned about a new technology, read about the ways to integrate it in the classroom, viewed lessons using the technology, explored the technology itself, and then shared it with their colleagues. They discuss the outline of the activity and review the results of their work, considering how they learned about a new technology. They realize that they have the skills to acquire what they need to teach with technology, and more importantly, they accept the role of learner as an ongoing one a journey that never ends. During this process, a critical component comes into play when students are asked if they did, in fact, view their peers' documents. Was the sharing of documents via the class discussion board effective? In this example, the instructor and the students discuss ways of improving the lesson, including changes that would be required for various classrooms, how one might ensure that students benefit from sharing, and how to further expand on the lesson. Simple completion of a task is not enough; we must constantly reflect on the experience, looking toward improving our teaching and learning with technology and assessing the potential and resulting effectiveness toward student learning. In short, we ask our students to be attentive, intelligent, reasonable, and responsible; in other words, we ask that they use Lonergan's transcendental method. Instruction within the online course is designed to be intensely student-centered, providing personalized learning opportunities oriented to meaningful issues in teaching and learning with technology. Further, the online environment is designed to permit a high degree of interactivity both with content of various kinds, links to databases and information sources and with people, experts, other students, and the instructors. It also creates a technology culture of use where students must use technology tools and environments to work with one another, arrange their schedules, submit assignments, and meet other course requirements. The students' immersion in a technology-rich learning environment provides further opportunity for teaching and learning using technology. What is crucial here is not only are they learning in a technology-rich environment and therefore gaining technological skills, but they are also coming to appreciate that the technology is enabling the learning because of its implicitness within the learning model.

At present our meta-teaching, we require students to make explicit connections about technology both as prospective teachers and as current and future learners. This approach to learning provides a model of how to create a technology-enhanced learning environment, which the teachers experience for themselves they learn the principles of designing learning environments that can be transferred into their future classrooms.

10. Conclusion

This paper reveals that a working definition of techno-pedagogically skilled teachers and exemplified how a hybrid approach of meta-teaching, technology exposure, and critical reflection can be used to enhance instruction. Prepare techno-pedagogically skilled teachers; it is crucial that we incorporate stick on of technology and pedagogy to our teachers with skills. The present education scenario in our country demands such as a techno-pedagogical skills that strengthens the teaching learning process through acquisition of quality knowledge would be more effective if the skilled transition.

11. References

1. Bailey JL, Stefaniak G. Preparing the information technology workforce for the new millennium. ACM SIGCPR Computer Personnel 2002; 20(4):4-15.
2. Bakia M, Murphy R, Anderson K, Estrella G. International experiences with technology in education: Final report. Washington, D.C.: U.S. Department of Education, Office of Educational Technology, 2011.
3. Beaudin L, Hadden C. Developing technopedagogical skills in preservice teachers. In Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education Norfolk, VA: Association for the Advancement of Computing in Education, 2004, 492-498.
4. Beisser SR. Technology mentorships in higher education: An optimal match for expanding educational computing skills. In Faculty development, ed. B. Gillan and K. McFerrin, 2000, 441-447.
5. Beisser SR, Kurth JL, Reinhart P. The teacher as learner: An undergraduate student and faculty mentorship success.

AACE Society for Information Technology and Teacher Education International Conference, Orlando, FL, 1997.
6. Brown A, Campione J, Day D. Learning to learn: On training students to learn from texts. Educational Researcher 1981; 10:14-21.
7. Clifford P, Friesen S, Lock J. Coming to teach in the 21st century: A research study conducted by the Galileo Education Network for Alberta Learning, 2004.
8. Fulton K. Technology training for teachers: A federal perspective. Educational Technology 1989; 29(3):12-17.