COLEGIO DE STA. ANA DE VICTORIAS, INC.
Osmeña Ave., Victorias City, Negros
Occidental Email:
colegiodestaanadevictorias@yahoo.com
Telefax No. (034) 399-2830

TECHNOLOGY FOR TEACHING AND LEARNING 1
Educ 214

Lesson 3: ROLES OF TECHNOLOGY FOR TEACHING AND LEARNING

LEARNING OUTCOMES

At the end of the lesson the student should be able to:

- Identify roles of technology for teaching and learning
- Appreciated the value of technology in supporting student learning

LEARNING INPUTS

Roles of Technology according to Stosic 2015

3 Domains of Educational Technology:

1. **Technology as a tutor**

   Together with the teacher, technology an support the teacher to teach another person or technology when programmed by the teacher can be a tutor on its own. The teacher will simply switch on or switch off radio programs, television programs or search to Google or You tube that contain educational programs. There are on-line tutorial educational programs or even Webinars.

2. **Technology as a teaching tool**

   Like a tutor, technology is a teching tool, but can nevr replace a teacher. Like any other tool, it is being used to facilitate and lighten the work of the teacher. It will be good if the teacher can also create or develop technology tools that are needed in the classroom.

3. **Technology as a learning tool**

   As a learning tool, it makes learning easy and effective. It can produce learning outcomes that call for technology-assisted instruction. Even teachers who are teaching can utilize similar tools for learning. as a learning tool, it is very interesting that even the elderly use these tools for learning for life.

A. Technology for Teachers and Teaching

As a tool, technology has opened wider avenues in management of resources and management of learning. it has modernized the teaching-learning environment in schools. Below are some examples of the myriad of roles that technology can do for teachers and teaching:

1. **Technology provides enormous support to the teacher as the facilitator of learning**

   It transforms a passive classroom to an active and interactive one with audio-visual aids, charts and models, smart classrooms, e-learning classrooms which motivate and increase attention level of learners. Many of these can be searched on the web.

2. **Technology has modernized the teaching-learning environment**

   The teachers are assisted and supplemented with appropriately structured instructional materials for daily activities. There are varied available technology-driven resources which can be utilized for remedial lessons or activities. Likewise there are also a lot of technology-driven resources that can be used for enrichment purposes. You may search for the examples on the web.

3. **Technology improves teaching-learning process and ways of teaching**

   This will make the act of teaching more efficient and effective. There are arrays of teaching methods and strategies that can use technology which are found compatible with learning styles. The multiple intelligence theory of Howard Gardner tells us that there is a genius in every child. This implies that there must be varied ways of teaching as there are many varied ways of learning. all the learning styles can find support from technology, so that teaching will be more effective and efficient.

4. **Technology opens new fields in educational researches**

   The areas of teaching testing and evaluation are enhanced by technologies for teaching and learning. Current educational researchers will no longer find difficulty in interpreting tests, assessment and other evaluation results. There are available programs that can analyze and interpret results with speed and accuracy. Reference retrieval is also hastened because many of the research materials are in digital form. Technology has also provided access to big data that can be processed for problem solving and inquiry.

5. **Technology adds to the competence of teachers and inculcates scientific outlook.**

   Through the utilization of theories of learning and intelligence, which are explained in references uploaded in the net, the teachers are encouraged to imbibe skills to source these information with speed and accuracy.

6. **Technology supports teacher professional development**

   With the demand of continuing professional development for teachers, the availability of technology provides alternative way of attending professional development online. For those a\who are involved as providers of continuing professional development like trainers, facilitators or organizers, they can level up or enhance their delivery systems with the support of technology tools.

B. Technology for Learners and Learning

1. **Support learners to learn how to learn on their own**

   3 categories of knowledge according to Egbert 2009:

   a. **Declarative Knowledge** consists of the discrete pieces of information that answers the questions what, who, when, and where. it is often learned through memorization of facts, drills and practice. It can be learned by simple mnemonics or conceptual maps. Declarative knowledge is the fundamental knowledge necessary for students to achieve more complex higher order thinking such as critical thinking and creativity, inquiry and production.

   b. **Structural knowledge** consists of facts or pieces of declarative knowledge put

together to attain meaning. An example of declarative knowledge is "pencil". The idea that evolved from a pencil is an understanding that, "it is something used to write." This is referred to as structural knowledge. It can be presented by concept maps, categorization or classification.

c. **Procedural knowledge** is knowledge in action or the knowledge of how to do something. It is based on facts but learned through the process of procedural knowledge. Examples include how to drive a car, how to use cell phones, or how to speak English. Procedural knowledge is indicated by a performance task or graphical representation of a concept

- There are varied programs that can be used by students off-line or on-line. What should be necessary is that the students are engaged, the tasks should focus on questions like how, why, and which in addition to who, when, what and where.

2. Technology enhances learners' communication skills through social interactions

- This is commonly described as the transmittal of information from one person to another as single individual or groups of individuals. According to Shirly (2003) in Egbert (2009), there are three basic communication patterns:

a. Point to point two-way or one-to-one like Internet chat, phone conversation or even face-to-face conversation

b. One-to-many outbound like a lecture, television. There is no social interaction.

c. Many-to-many like group discussion, buzz session, heads together. This kind of interaction provides opportunities for social interaction.

- Social interactions interaction through communication occurs through technology (directly between two persons via email, cell phone, or other communication technology. Or via google meet, google classroom, instagram, facebook, etc.

3. Technology upgrades learners' higher-order-thinking skills, critical thinking skills, problem solving and creativity

- **Critical thinking** refers to the ability to interpret, explain, evaluate, infer and self-regulate in order to make good decisions. With the use of technology, one will be able to evaluate the credibility of the source, ask appropriate questions, become open-minded, defend a position on an issue and draw conclusion with caution. All of these competencies are covered by Bloom's Taxonomy of Analysis, Synthesis and Evaluation

- Teachers, as role model, should display and practice critical thinking processes so that the learners can imitate them.

- Some ways by which teacher can develop critical thinking in the students:

a. Ask the right questions
b. Use critical thinking tasks with appropriate level of challenge
c. Vary the questions asked
d. Introduce new technologies
e. Modify learners' grouping
f. Modify the critical thinking task
g. Encourage curiosity

- **Creativity** is characterized as involving the ability to think Flexibly, fluently, originally, and elaborately. (Gioldford 1986 & Torrance 1974 in Egbert, 2009)

- **Flexibility –** able to use many points of view

Fluently – able to generate many ideas

Originally – implies being able to generate new ideas
Elaborately – able to add details

- Seven Creative Strategies (Osborn, 1963)
  1. Substitute – find something else to replace to do what it does
  2. Combine – blend two things that do not usually go together
  3. Adapt – look for other ways this can be used
  4. Modify/Magnify/Minify – make a change, enlarge, decrease
  5. Put to another use – find other users
  6. Eliminate – reduce, remove
  7. Reverse – turn upside-down, inside-out, front-side back

- What should teacher do to develop and enhance students' creativity:
  1. Provide an enriched environment
  2. Teach creative thinking strategies
  3. Allow learners to show what they can do
  4. Use creativity with technology
  5. Encourage students to find and use information from variety of sources both on-line and off-line
  6. Assist students to compare information form different sources
  7. Allow students to reflect through different delivery modes like writing, speaking or drawing
  8. Use real experiences and material to draw tentative decisions
  9. Involve students in creating and questioning assessment.
  10. Encourage digital production projects
  11. Popularize e-learning modalities
  12. Enhance global awareness and citizenship

Experience as a Learner

Write a paragraph about your personal experience on how technology has influenced your life as a learner from elementary, high school and college

How Technology Influenced My Life as a Learner

Expectation as a Future Teacher

Write a paragraph on how you are going to use technology when you will become a teacher.

How will I use Technology When I become a Teacher