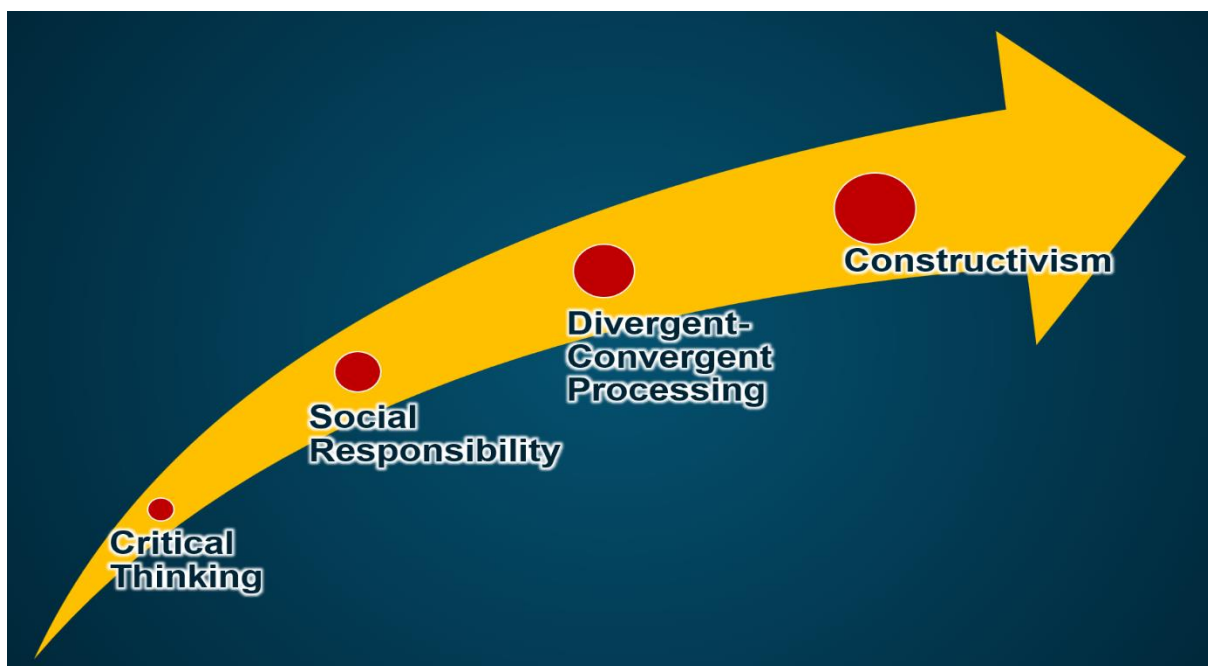


Lecture No. 13

Lesson Planning Involving the New Literacies *A Constructivist's Approach*

In this post-modern era, careers and industry have gone a long way in which people have become fond of discovering and re-discovering knowledge, and the new millennium sparked the advent of technologies that could rarely be bred from many schools. Now comes the so-called “new normal” brought about by the COVID-19 pandemic. While engrossed in reinventing Technology in teaching and learning, we face yet another significant disruption.



Educational Technology for pre-service teachers is viewed as the development of future teachers who will educate the next generation of learners who are bound to maneuver the future technologies and the economy considering the current disruptions caused by global health impediments.

We have engaged ourselves in learning through critical thinking. We believe that the experiences we have in life teach us about real-world knowledge and how we deal with it. How we respond to societal changes and standards is our social responsibility. We can deliver change by being critically observant about what society needs and in which aspects the people are interested.

This module introduces the philosophy of **CONSTRUCTIVISM** applied in the teaching and learning process. Constructivism refers to a person's thinking, where everything starts from environmental observations.

After completing this module, you are expected to be able to:

1. Determine how Constructivism is applied in instructional planning through the four-stage learning development framework; and,
2. Design a lesson plan that explains the relationships and differences between the four stages of constructivist learning through the media-based approach.



Let's get started...

A. The Constructivist Instructional Planning Approach

Constructivism rhymes with the premise that a vision to be created precedes knowledge. Having the idea in mind is the beginning of truth called knowledge (Nugroho & Wulandari, 2017). This closely relates to the philosophy of idealism that what exists are those that can be conceived in the mind, hence, mental. It can be further explained that what the mind can imagine reflects what a person experiences through sensation. Constructivism, therefore, amplifies the idea that the power of the mind to conceive pictures and events will pave the way for bringing out knowledge into reality from one's sensitivity to environmental experiences.

In today's teaching and learning integration, students are more engrossed in creative solutions; young children are not satisfied just absorbing what the teacher provides. Nelson (2013) typified a modern learner as having a fluid perspective about their environment. The learner is not fulfilled by following structures but by getting challenged to create images in mind and try to make them happen. Innovation is a major language of communication where learning is manifested by generating new concepts from new ways and means.

The Four Stages of Learning in Constructivism. Constructivism in education is perceived as creative thinking. It suggests the wisdom behind the variability of the human mind. Ruggiero (2012) proposes that creativity is preceded by critical thinking. This paved the way for his approach to becoming a critical thinker. He called it the "W.I.S.E. Approach to Thinking Critically" (p 23). This acronym stands for the four essential actions of critical thinking and of being wise: "wonder, investigate, speculate, and evaluate." Being wise in today's global perspectives entails that one has to produce something usable. This is Technology.

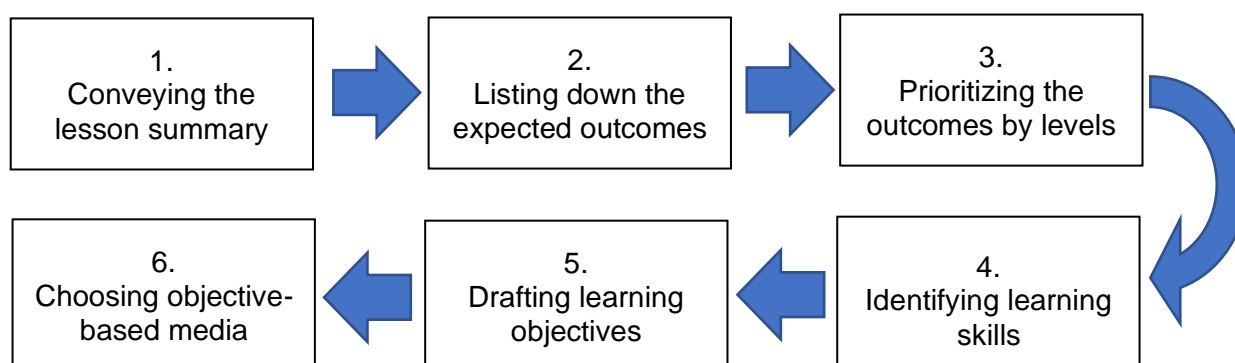
Technologizing teaching leads students to perform higher-order thinking. Creating is now on top of the other thinking competencies in the modified Bloom's Taxonomy of Cognitive Skills. Therefore, constructivist teaching could be the most relevant framework to kindle learners to be creative. The following matrix shows the synergized theories proving the four stages of learning in Constructivism.

Lucido's Conceptual Models of Constructivist Learning (Lucido, 2012)	Bandura's Social Cognitive Theory – Observational Learning Capabilities (Bjorklund, 2012)	Spiraling based on Piagetian Constructivism (Moore, 2012)	Walt Disney's Imagineering (adapted from www.disneyimagination.com Retrieved on September 26, 2016; & Nilsook,Utakrit,Clayden, 2014)	Creative Thinking: The Imagineering Continuum (Nilsook, Utakrit, Clayden, 2014, p.17)
Meaningful learning – acquiring background knowledge relevant to the new concepts	Symbolization and forethought – facility to think and represent learned concepts from the environment with images, thereby relating them to expected outcomes	Previous learning – students gain initial knowledge from experience known as “provisional ideas,” resulting in a working meaning	Imagining – making imaginative stories by collaborating with fellow Imagineers that are hoped to turn into reality	Inquiry-based learning – learners need to search for knowledge and integrate it in an innovative way to create learning objects or fulfill course requirements.
Discovery learning – engagement to experimentation and exploration of what is needed for further understanding	Self-regulation – facility to explore further and gain a better and broader understanding of learning concepts by observing own roles in the society	New experience – a related incident that may be similar or contrasting to the previous learning that adds up to what is already known	Blueprinting and illustrating – representing imaginative stories with visual media followed by modeling to test the possibility of putting fantasy into reality.	Problem-based learning – learners need to develop a basic understanding of existing knowledge before they can imagine what further options may be possible.
Generative learning – deriving new meanings resulting from the conclusions or decisions made after exploration	Self-reflection – facility to analyze and criticize learning to make logical conclusions and proposals to fit into what society accepts	Revised learning – an improved understanding of a concept that resulted from reconfiguration of previously learned meaning with later related experiences	Evaluating and improving – assessing the plans and models of the imagination to recommend points for improvement so that the ‘initial dream’ could be realized.	Case-based learning – learners need to practice by considering individual cases to identify critical common issues. Searching for related data will permit informed discussion and lead to imaginative conclusions to validate created knowledge.
Creative learning – assembly of a tool, practice, behavior, and/or procedure that learners make to adequately address the need raised and processed	Vicarious learning – facility to behave properly according to observed social practices and ethics	New construct – outputs or outcomes, such as behaviors, procedures, patterns, projects, tools, etc., created to implement the ultimate learning	Output-making – building the project by implementing plans based on the goal and the modified procedures	Project-based learning – although objectives and instruction may be provided so that the required output is achieved, learners’ imaginations should be engaged creatively

B. Media-Based Lesson Planning

Media-based teaching is an approach to innovating classroom instruction with multimedia suitable to students' learning demands concerning 21st-century skills (Nilsook et al., 2014). This approach can be appropriately used in subject matters requiring audio-visual media and manipulative devices. In using so, the teacher must have a clear perspective and broader knowledge of the topic. Recognizing and prioritizing learning outcomes and objectives pave the way for identifying the most applicable media and activities to attain them. It is, therefore, suggested that Edgar Dale’s Cone of Experience Model be used when befitting instructional media and learning activities with the set outcomes and objectives.

Lucido (2012) recommends the framework below as initial steps toward engineering a media-based teaching-learning experience.



1. **Conveying the lesson summary.** This first step is the teacher's way of synthesizing the subject matter's content, including the essential terms and their meanings, the theories, concepts, rules, and/or definitions that cover the entire lesson. The summary is based on the teacher's understanding and is usually stated in one *general concept or rule*.

2. **Listing down the expected outcomes.** A learning outcome is an observable behavior resulting from acquiring knowledge and understanding (Borabo in Lucido, 2012). In media-based teaching, the lesson summary or general concept is expected to suggest learning outcomes that students can perform upon learning it. The teacher has to list all desired behavior or performance students must demonstrate after the lesson.

3. **Prioritizing the outcomes by levels.** Arranging the outcomes according to the performance scope or levels entails the teacher prioritizing them. Levels are determined according to how the learning outcomes are drawn. According to Lucido (2012), there are five (5) levels of learning outcomes based on skills and behaviors that students are expected to give. They are arranged backward below.

a. **creative (output) level** – the final product to be done by the students

b. **assumptive (conclusive) level** – the general idea or meaning as a result of the collection of ideas explored, discovered, and discussed

c. **active (performance) level** – practical outcomes made by students in response to the

d. **adaptive (developmental) level** – learning outcomes from the analyses made about the different content parts of the subject matter

e. **associative (introductory) level** – pre-requisite ideas that may be learning outcomes from previous experiences or lessons

4. **Identifying learning skills.** Learning skills are more specific actions the students perform in response to the relevant learning outcomes. When these skills are correctly and accurately stated, the teacher will have a better and clearer view of what activities may be conducted with the students.

5. **Drafting learning objectives.** Behavioral objectives should be determined with close association with the identified learning skills.

6. **Choosing objective-based media.** Regarding the outcomes, skills, and objectives, the teacher needs to pay attention to what media, material, and/or activity may be utilized to help achieve the goals and learning outcomes as they were prioritized earlier. The teacher's resourcefulness, creativity, and responsiveness are the primary characteristics in developing a set of educational media.

Sample Preliminary Matrix in Media-Based Lesson Planning

Subject Matter: **Lever as Simple Machines**

Lesson summary/general content:

Machines are tools made and used by man to make work easier. There are complex machines that perform gigantic work, such as a tractor to make farming a lot easier or the industrial machine from food processing to packing canned goods. Simple machines, like levers, are also used in our daily activities. Levers come in various forms, such as scissors for cutting paper or cloth, a bottle opener, or a mere coin to open the lid of a tin can. The general idea is that levers can increase the force and make work easier. Three (3) classes of levers, the first, second, and third classes, can be classified according to the position of the fulcrum concerning the effort and load.

Priority Level	Learning Outcome (Able to...)	Skills / Competencies	Behavioral Objective	Suggested multimedia for use
associative	determine how force can act upon work (as a sort of review of past lessons)	analyzing figures and oral explanation	re-state the principles of force and motion using the concepts of machines	jigsaw puzzles
adaptive	relate levers with our daily activities and tasks	analyzing and comparing concepts	distinguish levers from other simple machines that we usually make use of at home, in school, or anywhere	simple machines found in the classroom, e.g., window clips, door knobs, hinges, sharpeners, etc.
active	infer by giving examples of how a lever works concerning its three principal parts	operating definitions and functions in real-life examples	identify examples of levers by emphasizing the three parts: effort, load, and fulcrum	real objects – can opener, scissors, forceps, tweezers, spoon, and milk can with lid
assumptive	prove, explain, and conclude how levers make work easier and faster	generalizing the primary function from the more specific ones	state and describe that levers are tools that increase force and make work easier	Powerpoint® presentation on a demonstrative diagram of levers at work
creative	organize actions how to ensure the safety and usefulness of levers by making a multimedia presentation	preparing a relevant multimedia presentation	suggest guidelines on how to take care of levers and other tools	pictures of tools being used; video clip on “safety on tools” by Disney™ (2012)

MEDIA-BASED LESSON PLAN TEMPLATE:

Media-based Lesson Plan in _____

1. On the topic assigned to you, identify the number of minutes, the level of the pupils/students, and the reference where the topic was taken.

Subject Area: _____ Topic/Subject Matter: _____

Yr./Gr. Level: _____ Number of Minutes: _____ Reference(s): _____

2. **Objectives:** State your main goal. This is the terminal outcome that you want your learners to perform and master that should reflect on their behaviors and actions. Next, identify at least two (2) specific **behavioral objectives** and the possible educational media to attain each goal.

Main goal: _____

To achieve this goal, the learners are expected to do the following:

a. _____

media: _____

b. _____

media: _____

Other Materials/Media: _____

3. **Procedure** (Design the usual teaching procedure plus integrating the media used.)

a. **Motivation** (What media-based activity will you use to call the attention and interest of the students/pupils?)

b. **Presentation** (What multimedia or activity will you use to introduce the lesson? This reveals the concepts that give clues to the lesson.)

c. **Integration** (Describe how the introductory activities would reveal the real lesson. This discussion elicits critical thinking, with no need for extra media.)

d. **Development** (Detail how you would achieve your main objectives through discovery and generative learning using another multimedia or activity.)

e. **Generalization** (By thorough interaction with the learners, encourage them to state the Generalization and/or perform the skill you expect of them. State the questions you will ask to help the students formulate the main idea/goal.)

f. **Enrichment and Valuation** (What reinforcement and/or enrichment activity using IT-based media to ensure your pupils/students can master the learned general concept and skills. Design a drill activity.)

4. **Evaluation** (Device a short examination employing a powerpoint presentation or any other related application.)

5. **Application and Assignment** (Create a simple activity that will require students to use computers and other technological gadgets relevant to the topic undertaken or part of the following lessons. Write a simple direction and the things required.)

MEDIA-BASED LESSON PLAN SAMPLE

Media-based Lesson Plan in Science and Technology Grade 7

Pre-planning Assessment: *After the previous lessons about force and motion, the grade VII students performed satisfactorily (Class Ave: 87%) in identifying the causes of motion and how force in varying forms affects motion.*

1. Rationale:

Subject Area: **Physics** Topic/Subject Matter: **Levers as Simple Machines**
Yr./Gr. Level: **Grade VII** Number of Minutes: **60**
Reference: **Science & Technology in the Rapidly Changing World (Grade VII series), pp.63-70 By Dr. Albert T. Arrevalo (2012)**

2. Objectives:

Main Goal: This lesson aims to make students explore how levers work to facilitate man's daily activities and tasks.

To achieve this goal, the learners are expected to do the following:

- a. name different tools and infer their uses
media: simple machines found in the classroom, e.g., window clips, door knobs, hinges, screws, sharpeners, bags, pens, stairs, ladders, etc.
- b. identify examples of levers by emphasizing the three parts: effort, load, and fulcrum
media: natural objects available in the classroom, Powerpoint® presentation on how levers work, parts of the lever
- c. state and explain that levers are tools that increase force and make work easier
media: Experiment/challenge: scissors with detachable handles, paper, nails inserted in wood and hammer, soda bottle with crown, bottle opener, tin can with lid, metal spoon
- d. suggest guidelines on how to take care of levers and other tools for people's safety
media: pictures of tools being used; video clip on "safety on tools" by Disney™ (2012)

Other Materials/Media: three sets of jigsaw puzzles of pictures of a manual water pump, pliers, and wheelbarrow in flannel boards for the motivation

3. Procedure

a. Motivation

Group the students into three. Each group is given a jigsaw puzzle that will be solved and posted on the board the fastest way possible, and write the name of the object. After forming the mystery pictures, each group will name some activities or works that their formed object is usually used.

b. Presentation

Ask the rest of the students what these things' uses are. Make them tell that these are tools by emphasizing the benefits they give. Let them name other tools as many as they know and give their uses.

c. Integration

Using powerpoint®, demonstrate how these tools work until they name them as **levers**. Emphasize why these tools are called levers. Guide them on the parts where the force comes from and where the work is done. Use configuration boxes or any other word puzzle to identify the **effort** to mean the source of force and the **load** resulting from work. Help them also identify that the point separating the effort and the load is called the **fulcrum**. Ask four or five volunteers to determine the effort, load, and fulcrum parts of the given levers and make them explain briefly why.

d. Development

Challenge the students to draw out nails in wood and open a bottle cap using their bare hands. Then let them do the same using a hammer and a bottle opener, respectively. Ask: *“Why can’t you do the job without using the lever?”* *“What happens to your force when you use levers?”* *“What happens to the work produced after using a lever?”* Ask them to open a tin can lid with their fingers and then use a metal spoon. Ask the same questions.

e. Generalization

Make students notice the advantages of the parts of the levers concerning force and work. Guide them by asking questions on the functions of the parts of a lever to make them say that **“levers can increase the force and make work easier”**.

f. Enrichment and Valuation

“How do levers help people in doing their daily tasks? Give examples.”

Show a video clip on “safety on tools” to make them realize the significance of their answers here. Require students to suggest steps, guidelines, measures, and tips on how to keep the safety on the use and storage of the tools, especially levers used daily such as door knobs, bottle/can openers, scissors, etc.

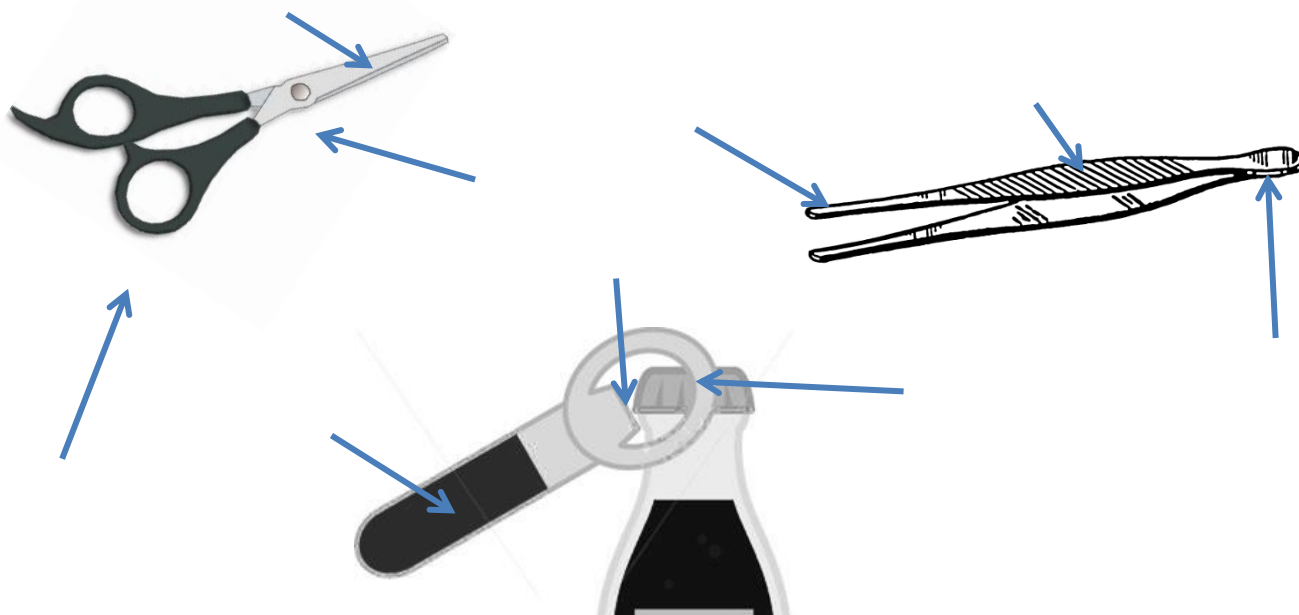
4. Evaluation (prepared in Powerpoint®)

A. Match the tools on the left with their primary uses on the right. (for objective a)



- For carrying
- For clipping
- For fastening
- For rotating

B. Label the pointed parts of the given levers as effort, load or fulcrum. (for objective b)



C. Write “**Yes**” on the blank before the number to signify it’s a good practice. Write “**No**” if not. (for objectives c & d)

- _____ 1. Levers make work heavier.
- _____ 2. The amount of force given increases with the use of a lever.
- _____ 3. The lesser the effort, the more work is done in using a lever.
- _____ 4. It is okay to expose metal tools to moisture because they are durable.
- _____ 5. Wearing gloves and eye goggles may be used to be safer in using tools.

5. Application and Assignment

Take at least three (3) pictures showing the proper way of keeping tools and safety in using them. Arrange the pictures in Powerpoint® slides and put a caption in each picture. Submit your PPT document via email.

Rubric for grading (total = 20 points)

Completeness and Correctness of the pictures: 5 points	3 or more correct without mistake = 5pts. 3 or more correct with 1 mistake = 4pts. 3 or more correct with 2 mistakes = 3 pts. 2 correct = 2 pts.; 1 correct = 1 pt. 3 or more mistakes = 0 pt.
Adequacy and appropriateness of captions:	5 points
Creativity and interactivity in the powerpoint® format:	5 points
Sharpness and vividness of pictures:	3 points
Overall visual appeal:	2 points

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