Lesson Plan: PowerPoint Basics

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EDU510: The Cognitive Science of Teaching and Learning

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June 11, 2022

Lesson Plan/Activity:	
Title:	PowerPoint Basics
Audience:	Grade 6 Classroom Average age: 12
Subject:	Computer / Digital Presentation Skills
Grade Level:	6
Time Duration:	45 minutes
Overview:	During this activity, the teacher will demonstrate to the class what a completed PowerPoint presentation looks like by displaying it on a Smart Board or other digital device. The children then will have the opportunity to create a basic one-slide presentation of their own by mirroring the teacher's steps.
Objective:	This lesson plan will support students in basic understanding of how to create a one-slide digital presentation.
Materials:	Student laptops or desktop computers (1:1) PowerPoint application Digital projection device (e.g., Smart Board) Internet access
Activities and Procedures:	This activity will begin by the teacher displaying an already made PowerPoint presentation on a digital screen to demonstrate a visually conceptual idea of what a completed presentation can look like. It will be explained that there are many uses of presentations, such as for book reports, speeches, class presentations, science fairs, etc. While viewing the demo presentation, the teacher will point out key elements of understanding that will soon be taught, quickly discussing how they are used in presentations, such as: • Notice how many slides there are • Notice each slide has the same format (theme) • Notice the different items on the slide: - Text, image/photo, video, shape, WordArt • Notice the bullets and numbered lists

Activities and Procedures (Cont'd)	The teacher will use a book/magazine conceptual analogy to describe a PowerPoint presentation: • A digital presentation tells a story • Each slide is like a page that pushes the story along • Words and pictures tell the story During this opening exercise, the teacher will ask the students to write down things they like about the demo presentation, so they will pay closer attention, feel inspired with new ideas, and be able to recall when creating their own. After the demonstration, the teacher will ask students to brainstorm 2 or 3 ideas of what they would like to their presentation to be about, allowing about five minutes for this activity and encouraging students to collaborate ideas with each other. The idea should be about one of their "favorite things" (e.g., My Favorite Book, My Favorite Hobby, etc.). After three minutes, the teacher will ask the students to select their favorite idea. Once the students have identified which "favorite" topic they will use for their presentation, the teacher will ask the students to organize their thoughts and sketch on paper a visual outline of how they would like their one slide to look like, using elements of (at least) one text box, image, shape, WordArt, and bullet and numbered lists. Students will be told what the title of the slide will be to help when conceptualizing its page content: • Why My Favorite _____ is _____ The students can now open the PowerPoint application on their computers. The teacher will use a scaffolding approach when teaching the following steps. In other words, the teacher will walk around the classroom to every student's desk to ensure that each step is accomplished before proceeding to the next. ***How-to Steps that are to be demonstrated by the teacher, performed by each student, and verified by the teacher:*** • Selecting a PowerPoint theme • Inserting/Deleting a slide • Adding (at least one of each): - Text box - Image (graphic or photo from the computer)

Activities and Procedures (Cont'd)	- Shape - WordArt - Bullet list + Numbered List • Moving elements around on the page • File/Save As/File naming The teacher will also show the students how to format text by using the following basic attributes: • Bold • Italicize • Underline • Font + Size • Color **Closing Activities:** 1. After the lesson portion of the activity, students will have an additional 10 minutes to practice, discover, and play with their PowerPoint slide. 2. When this time is over, students will take turns sharing their presentations with the class. 3. The final two segments will be class- and self-reflection activities. <u>Class Discussion</u> • Was there anything new that you discovered on your own when creating your slide that was not taught by the teacher? • Can you think of other reasons for using a PowerPoint presentation? • Was there something in a classmate's presentation that you liked and want to also do the next time you make a presentation? <u>Self-Reflection</u> (To be given as a homework assignment) • Did you enjoy this activity? What did you like best? • Is there anything about making a PowerPoint presentation that you want to get better at? • How did you feel when you completed your slide?

Assessment:	Assessment will be performed in two ways: by the teacher observing student effort during the activity and by the student's successful demonstration that they can perform the required tasks. <u>Student Effort</u> • *Proficient* – Student demonstrates effort. • *Needs development* – Student demonstrates little effort. • *Deficient* – Student demonstrates no effort. <u>Task Demonstration</u> • *Proficient* – Student presents complete understanding and execution of the activity's tasks. • *Needs Development* – Student attempts the tasks but is yet unable to achieve the activity tasks. • *Deficient* – Student demonstrates no attempt to complete activity tasks.
Additional Information:	This lesson plan could be extended to a future lesson where project management skills are introduced. Students would be assigned to teams, and each team would have the task of creating a presentation deck. Each student would be responsible for creating one slide for the team deck. Students would demonstrate newly introduced project management skills to conceptualize, design, and develop a team presentation deck, while practicing and refining their PowerPoint skills. Additionally, if Word has already been introduced to the students, the mental representations of analogy (forming a connection between a new topic and what has already been taught) and retrieval (search and recall) could be used to reference the lesson activities when learning PowerPoint since several attributes in these two Microsoft Office programs are the same.

Lesson Details and Focus – (Mental Representations)

	Mental Representation and Description	**Examples appropriate to the cited mental representation**	**List up to two ways or strategies employed in the lesson**
	Concepts are generalized ideas that offer a larger abstract idea or mental symbol and organize the complex into simple (New World Encyclopedia, n.d.).	When learning PowerPoint, it is essential to understand the overall concept that: • A digital presentation tells a story • Each slide pushes the story along • Slide elements (text, image, etc.) are ingredients that tell the story	1. The teacher will use a book/magazine conceptual analogy to describe a PowerPoint presentation: • A digital presentation tells a story • Each slide is a page that pushes the story along • Words and pictures tell the story 2. Conceptual knowledge of the basics of storytelling flow is needed for this activity. For example, a story has a beginning, middle, and end.
	Images and other kinds of visuals "play an important role in human thinking" (Thagard, 2018, para. 22).	Examples aid in making an abstract idea real because "it's a lot easier for students to recall concrete examples than abstract ideas" (Berlin, 2021). When learning PowerPoint, it is helpful to see an example of an already created presentation to visualize what is being taught. This will help students to create a contextual understanding and ideate their own creations.	1. The teacher will demonstrate on a Smart Board or other digital sharing device a completed PowerPoint presentation, while pointing out the different elements (text, images, etc.). 2. Students will share their completed slides with the classroom. This will expose students to different ways that images can be used and inspire future ideas. 3. Images also come into play when the students create their own sketch.
	Analogies help to form a connection between a new topic and what is being taught to create a better understanding.	Being able to reference something that students already know is beneficial to learning because it "reinforces thinking skills and conceptual understanding" (Lombardi, 2018). Because many attributes across Microsoft Suite applications are the same or similar, when learning PowerPoint, they can be cross-referenced during the lesson.	1. The teacher will use a book/magazine conceptual analogy to describe a PowerPoint presentation: • A digital presentation is like a story • Each slide is like a page that pushes the story along • Words and pictures on a slide are like the content of a book or magazine 2. If the students are familiar with Word or Excel, the teacher can make the connection between the similar attributes in PowerPoint.

Lesson Details and Focus – (Objectives and Cognitive Principles)

	Lesson Objective: What do students need to know and be able to do?	**Cognitive Principle(s) in my own words**	**Structure of the Learning Activity**	**Assessment for desired Student Outcomes**	**Resource: Cite one resource supporting your understanding**
	1. Learn how to create a basic PowerPoint (PPT) slide	***Find Good Junior Versions + Don't burden learners with too many things at once:*** Students have unique learning styles and are at different levels of development. Therefore, learning should be delivered in logical sequential chunks. Students should be participants, not spectators. Learning fewer things at a once allows students to "win" at more milestone achievements and prevents them from feeling discouraged and overwhelmed because they are seeing progress.	Begin with entry level knowledge (e.g., create one slide with text and photos) and use scaffolding to evolve to advanced learning (e.g., create a deck with progressive multimedia).	Assessment will occur as described above related to Student Effort + Task Demonstration (Proficient, Needs Development, Deficient).	"The journey to the full version of the whole game amounts to a staircase of junior versions with steps that become successively more complex and demanding" (Perkins, 2010, p. 40).
	2. Feel confident, brave, and creative in learning new things	***Anticipate the Hard Parts*** To get good at something, it takes deliberate practice of working on the hard parts.	Teacher begins with a visual demo coupled with verbal instruction. Students will then practice on their own with classmate discussion allowed. After students had time to solo practice, the teacher will ask the class what parts they found struggling (lead-in to Lesson #3).	The assessment for this emotion-based objective is subjective. Feedback from the teacher, as well as self-reflective assessments (at the end of the full lesson) can help to identify perceived success in this area.	Anticipating the hard parts and patterns of "troublesome knowledge" allows educators to "organize learning in ways that work against it" (Perkins, 2010, p. 107).
	3. Make connections and learn from the work of fellow students	***Learn from the Team + Pair Problem-Solving:*** Students can learn together or via witnessing each other's work. Problem-solving in pairs allows students to help themselves and each other by talking out loud their ideas, reasoning, and action steps.	During practice time (after the teacher instruction and demo), students will group into pairs to "talk through" the steps they found struggling during their solo practice time.	Assessment will occur as described above related to Student Effort + Task Demonstration (Proficient, Needs Development, Deficient).	"Other participants can be valuable sources of information […] either from learning from the learner observing what they do or from their direct counsel and coaching" (Perkins, 2010, p. 171). Learners become "much more self-aware and self-managing" when pair problem-solving," and it "works on the hard parts very well" (Perkins, 2010, p. 177).

Summary (Project 1)

1. **Provide any additional details required to define the content of your lesson plan.**

The requirement of this exercise put into practice what I have learned so far in this class. In other words, when creating this lesson plan, I incorporated segments that I have learned are beneficial. For example, sharing ideas about the many uses of presentations with students help their conceptual understanding. Asking students to write down things they like during the teacher demo and sketch their slide outline helps with the mental construct of imagery, concept, analogy, and self-reflection. Asking students to identify their topic offers autonomy and evokes a sense of involvement, investment, and interest. Using a scaffolding approach ensures no student is left behind. Taking time to practice, discover, and play with new knowledge is vital to building mental muscle through failure, creating reinforcement, and having fun. These elements around teaching and learning have been the most valuable for me.

2. **Provide a summary of your understanding of applying the ideas in teaching and learning.**

According to Piaget's 4 Stages of Cognitive Development, children around 12 are in the formal operational stage. They can grasp "moral, philosophical, ethical, social, and political issues that require theoretical and abstract reasoning" (Cherry, 2022). Therefore, students in a Grade 6 classroom are at a good age to learn the conceptual and technical skills required to create a digital presentation.

3. **Ensure appropriate connections are made between your work, unit content, and class discussions.**

I would argue that there are many connections between the unit content and our unit discussions and teaching and learning in general – whether in my corporate employee training environment or a K-16 classroom. Understanding how mental understandings (a schema) and mental procedures (computations) are best used in learning is critical. Not all mental representations are applicable for each learning experience. For example, in this PowerPoint lesson, it would be a stretch to suggest that Logic or Rules are prevalent in the curriculum, inasmuch Concepts, Images, and Analogies are.

4. **What changes do you envision for education, teaching and learning based on your work?**

In my role overseeing the execution of employee annual compliance training, I work with L&D each year to revisit the course outline for the upcoming year to identify any changes we want to make. I now better understand the importance of self-reflection and group collaboration in learning. It enables personal learning benefits, such as reinforcement, self-pride (after an accomplishment or new knowledge), and confidence when the next scaffolding step occurs.

5. **How does this lesson plan inform your understanding of the future of education in your professional setting?**

Creating this lesson plan took a great deal of out-of-box thinking because I do not work in the education system and have never seen a lesson plan before. My favorite new learnings were the importance of scaffolding, self-reflection, practice and failing, and the five mental representations (logic, rules, concepts, images, analogies). This exercise will help me in the future in two ways. One, I will aim to build on these practices and theories in my corporate training work. Two, I will be able to understand better and support my future students, as I aspire to teach communication curriculum as an adjunct college instructor following my M.Ed. degree.

Summary (Project 2)

1. **Provide any additional details required to define the information of your lesson plan.**

There were several essential takeaways I learned in Units 4 and 5, not all of which can be applied to the lesson plan herein. However, the ones involved are ideally apt. For example, many fancy things can be taught when learning how to use PowerPoint, but it is unnecessary (and impractical) to teach learners (of any age) all of it all at once. Beginning with a "junior version" allows students to feel successful in their micro achievements until they are ready for advanced macro learning. Also, Perkins believes that emotions impact a learner's motivation and, therefore, should involve tasks that evoke "curiosity, creativity, [and] camaraderie" (Perkins, 2009, p. 30). Asking students to simulate the teacher's demonstration and discover new things during solo/paired practice sessions offers the opportunity for exploration, teamwork, increased levels of inquiry, and critical exchange of ideas, to name a few. Lastly, because multiple activities of self-directed assignments are baked into the lesson (e.g., choosing a topic for the PowerPoint slide, discovery practice time, pairing exercise), it aims to create an inspiring and creative environment where students want to learn. This makes a paradigm shift from student engagement to student empowerment (Spencer, 2017).

2. **Summary of your understanding of the application of the ideas in teaching and learning.**

My lesson plan includes five cognitive principles and ideas borrowed from Perkins' theory on learning: use a "junior version," anticipate the hard parts, don't burden learners with too many things at once, learn from the team, and pair up students for problem-solving exercises. There are many benefits to these applications. For example, junior versions make learning more approachable for students, thus increasing their motivation "beliefs" (self-efficacy, mood, attribute). According to Aurora Institute (2019), these beliefs become the catalyst for motivation "actions" (to begin, persist, give mental effort) to show up easier. Students then experience "learning results" (fluency, ease). Junior versions also allow learners to be involved with tackling a few tasks at a time. In contrast, more complex arrangements would intimidate students and make practicing the hard parts too demanding. Lastly, collaborative and observational learning creates exploratory learning, develops better understanding, and enables self-explanation when a student explains out loud their thought process.

3. **Appropriate connections are made between your work, unit content, and class discussions.**

As explained in my Unit 3 Summary to this question, the concepts, theories, and ideas learned in Units 4 and 5 are highly applicable to any learning setting – whether a corporate employee training environment, a K-16 classroom, higher learning, adult online workshops, or any backdrop where the assimilation and understanding of information are required (or desired). Most learners will need to walk before they can run (e.g., junior version), practice what they learn to become proficient, and learn from others. Therefore, the cognitive approaches, definitions, theories, and aspects of "self" related to learning widely apply to any formal or informal schooling or training.

4. **How do your lesson objectives utilize the Cognitive Science principles?**

A junior version (using fewer steps) of learning will ask students to create one PowerPoint slide versus an entire slide deck. The teacher will ask students to identify areas of struggle, leading to practicing the hard parts. Finally, pairing up students to explore problem areas will allow them to help others and themselves by talking out loud their ideas, reasoning, and action steps. This also creates more self-awareness and self-management.

5. **In what ways does your lesson help students to learn to solve problems, think critically, and/or learn from teamwork?**

This PowerPoint lesson helps students in several ways. On their way to acquiring a skill (PowerPoint), they also learn other inherent techniques. For example, students are learning to use metacognition during self-reflection (when asked for areas of struggle and as a homework assignment). They are learning to solve problems through analogy (during the lesson), practice (during solo discovery), and social contexts (during class discussions, when paired with others, and during the final sharing of student presentations). They are learning to think critically when working on their identified hard parts by deconstructing the steps to find out where they are having trouble. During the pairing exercise, critical thinking is also used when exchanging ideas and listening to others' points of view and offering alternative steps the one might take. This helps both students: the struggler and the helper.

References

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