Work 1: Educational Theory Literature Review

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Project Description

Take one of the theories or theoretical concepts introduced in this course. Look ahead into the course learning module to get a sense of upcoming ideas—don't feel constrained to explore concepts introduced early in the course. Or explore a related theory or concept of your own choosing that is relevant to the course themes.

Theoretical and Empirical Literature Review: Your work must be in the genre of a literature review with at least 5 new scholarly sources (peer reviewed journal articles or scholarly books) that you have not previously used in this or other courses. Of course, in addition to these five, you will reference previously used sources and other media. In the references section, you should add an asterisk in front of every new scholarly source.

Convey in your introduction how your topic aligns with the course themes and your experience and interests. Outline the theory or define the concept referring to the theoretical and research literature and illustrate the significance of the theory using examples of this concept at work in pedagogical practice, supported by scholarly sources.

Rubric: Use the 'Knowledge Process Rubric' against which others will review your work, and against which you will do your self-review at the completion of your final draft. You will find this rubric at the end of this document, and also in CGScholar: Creator => Feedback => Rubric.

Word length: at least 2000 words

Media: Include at least 7 media elements, such as images, diagrams, infographics, tables, embedded videos, (either uploaded into CGScholar, or embedded from other sites), web links, PDFs, datasets or other digital media. Be sure these are well integrated into your work. Explain or discuss each media item in the text of your work. You should refer to specific points of the video with timecodes or the particular aspects of the media object that you want your readers to focus on. Caption each item sourced from the web with a link and be sure to cite all media sources in the references list.

References: Include a References "element" or section with the scholarly articles or books that you have used and referred to in the text, plus any other necessary or relevant references, including websites and media.

Important Note: The First Draft means a complete first version of your Work!
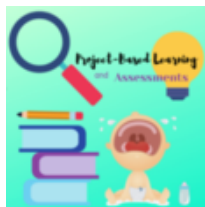
The Constructivism Approach:
The Constructivism Approach: Assessing Project-Based Learning
Am I Ready to Be a Parent at 13?

Paquita Elese Reedy

Mar 24, 2021 at 11:28 AM
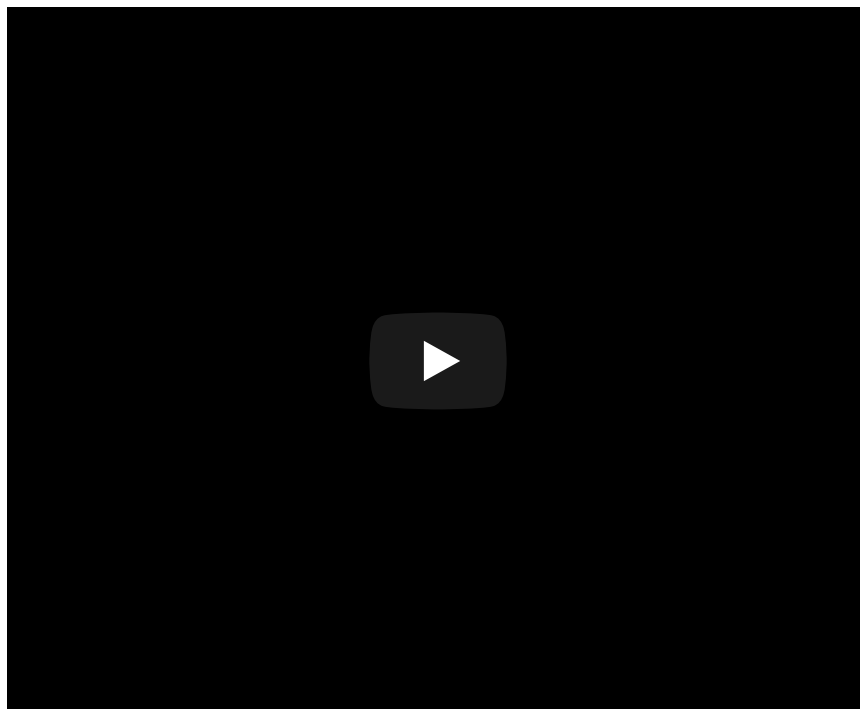
What is Project-Based Learning (PBJ)?

"Project-based learning (PBL) is a teaching method in which students learn by actively engaging in real-world and personally meaningful projects" (Buck Institute of Education, n.d.). Although viewed as 21st century learning, it has a range of early foundations. Confucius and Aristotle believed in learning through actions, while Socrates modeled how to learn through questions, inquiry, and critical thinking (Boss, 2011). In addition, the

developer of Montessori education, Maria Montessori, created a self-paced, experimental type of learning environment, which mirrors project-based learning. Boss (2011, para. 9) states, "Through years of research, scientists have advanced our understanding of how we learn, how we develop, and how we begin to think at a higher level."

Stix & Hrbek (2006) lists the following as the steps to project-based learning.

- The teacher provides real-life examples.
- The student (or teacher) takes on the role of project designer.
- The student discusses and accumulates background information.
- The teacher and students create criteria for evaluating the project.
- The student gathers the materials needed for the project.
- The student creates (or completes) the project.
- The student prepares to present the project.
- The student presents the results of the project.
- The student reflects on the process and evaluate the project.

Project-based learning is student-directed which helps students gain a deeper understanding. Video 1 below explains the concept of project-based learning.
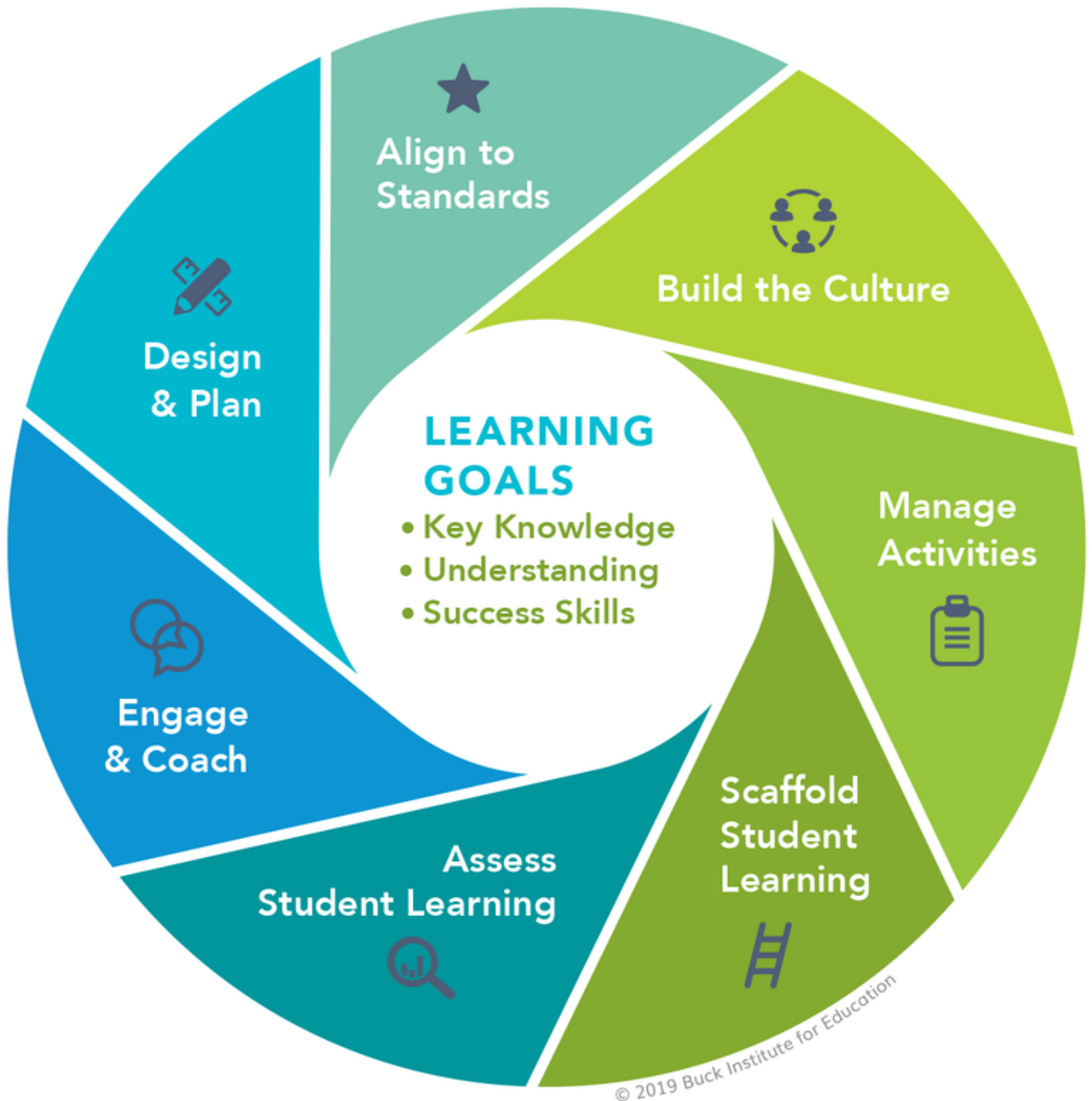

Media embedded February 16, 2021

VIdeo 1: PBLWorks. (2010, December 9). Project-based learning: Explained [Video]. YouTube. https://youtu.be/LMCZvGesRz8

The Gold Standard of Project-Based Learning, according to Buck Institute of Education's PBLWorks, is illustrated in the image below.

Gold Standard PBL

Seven Project Based Teaching Practices

Align to Standards

Build the Culture

Design & Plan

LEARNING GOALS
- Key Knowledge
- Understanding
- Success Skills

Manage Activities

Engage & Coach

Scaffold Student Learning

Assess Student Learning

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Project-based learning is student-driven and teacher-facilitated, which increases motivation to learn (Bell, 2010, pg. 1). Barron et al (1998), states that the principles of project-based learning are:

1. Learning-approprote goals
2. Scaffolds that support both student and teacher learning
3. Frequent oppotunities for formative self-assessment and revisions, and
4. Social organization that promote participations and result in a sense of agency. (p. 273)

These principals help students become acquire skills and content and take responsibility and ownership of their learning (Barron et, al, 1998, p. 273).

Why use Project-Based Learning

Project-based learning is used by many educators because of a number of benefits. The benefits include:

1. collaboration
2. problem solving
3. creativity
4. in-dept understanding
5. self-confidence
6. critical thinking
7. perseverance
8. project management
9. curiosity
10. empowerment (Shaffer, 2018)

Video 2 provides an explanation of how project-based learning promotes learning, including examples.
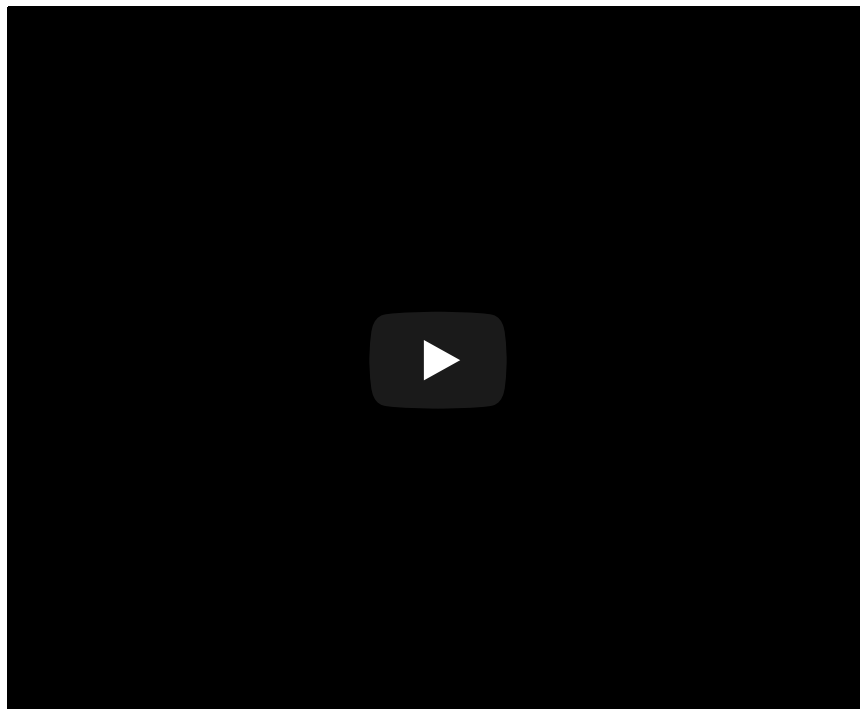
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VIdeo 2: Teachings In Education. (2017, June 15). Project based learning: Why, how, and examples [Video]. YouTube. https://youtu.be/EuzgJlqzjFw

Although core courses are important, students need the skills (created by career and technical programs) to live in a rapidly changing environment (Institute of Politics, n.d.). In the Career and Technical Education program in Alabama, educators use the infant simulator for classes such as child development, early childhood education, and human services. The infant simulators aren't simply used to discouraged teen pregnancy, which is the most frequently used misconception. Project, the term, can mean different learning experiences but it still centers around the idea of "learning by doing" (Barron et al., 1998).

Experience with Project-Based Learning

As a Family and Consumer Science educator, I use project-based learning in my classroom. The Career and Technical Education (CTE) program in Alabama requires project-based learning in the state's Family and Consumer Science curriculum. The most current PBL (that I have used) is the RealCare Baby Infant Simulator. The infant simulator is a learning aid developed to teach early childhood, parenting, infant health lessons, and sex education ("RealCare Baby 3 Infant Simulator," n.d.). Students were responsible for the care of an infant simulator for seven days. The advanced simulator "tracked behaviors to include care events [feeding, diaper change, bonding], mishandling actions, time in a car seat as well as clothing changes" ("RealCare Baby 3 Infant Simulator," n.d. para 1). Assessing this particular unit involves a series of assessments, from diagnostic to summative.

RealCare baby 3 infant simulator [image]. (n.d.). Realityworks. https://www.realityworks.com/wp-content/uploads/2019/07/carseattagright2020-withaccessories-tag.jpg

Assessing Project-Based Learning with Rubrics

Assessment is important in that it determines whether educational goals are met. Stassen et al. (2001, pg. 7) define assessment as "the systematic collection and analysis of information to improve student learning." Assessment that is best suited to provide immediate results are

quizzes, tests, and writing assignments because of their relation to classroom goals. When assessing project-based learning activities, it should be integrated into instruction and not simply used as an auditing tool (McMillian, 2000, p. 1). Using a rubric is ideal in project-based learning. A rubric is a scoring guide that evaluates a student's performance. It usually contains criteria of the work, performance rating, and a description of each.

Video 3 explains the purpose of a rubric and how its ideal for project-based learning.
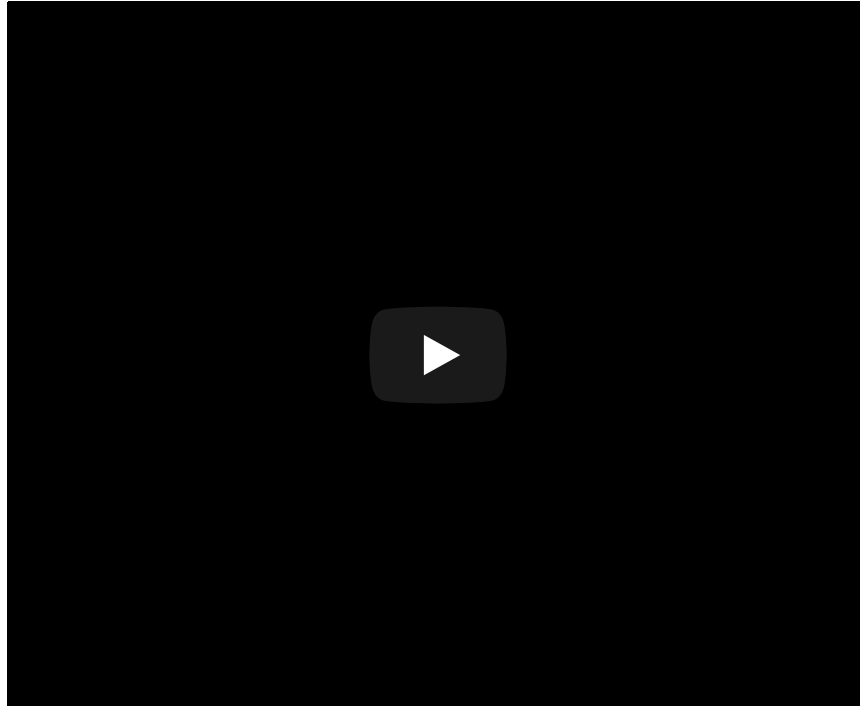
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Video 3: Teachings in Education. (2016, December 16). Rubrics for assessment [Video]. YouTube. https://youtu.be/b4shMaSel00

Using a rubric for project-based learning activities, is beneficial to the teacher and the student. According to Cornell University's Center for Teaching Innovation, rubrics help instructors:

- Assess assignments consistently from student-to-student.
- Save time in grading, both short-term and long-term.
- Give timely, effective feedback and promote student learning in a sustainable way.
- Clarify expectations and components of an assignment for both students and course teaching assistants.
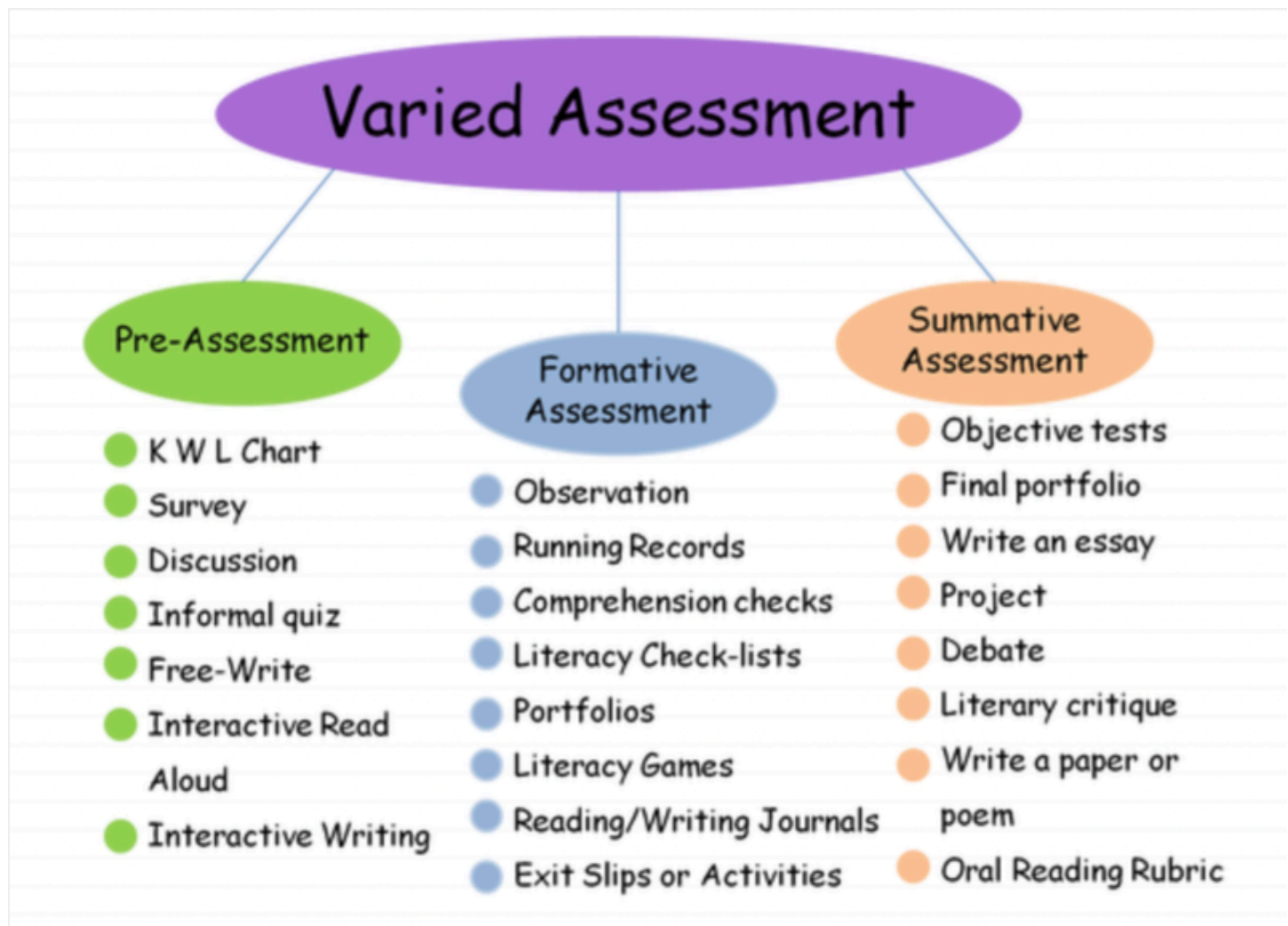- Refine teaching methods by evaluating rubric results.

Rubrics help students:

- Understand expectations and components of an assignment.
- Become more aware of their learning process and progress.
- Improve work through timely and detailed feedback. (2021, para. 2)

According to Grant (2002, pg. 3), "the rubric includes three constructs-knowledge, reasoning and communication-with levels of proficiency for each." The objectivity of a rubric provides clear expectations for the project. In turn, this helps students assess their own learning.

Accessing Project-Based Learning- Other Methods

Although assessment using a rubric provides clear expectations and allows for student self-assessment, there are other methods that can be used.

Varied Assessment

Pre-Assessment
- K W L Chart
- Survey
- Discussion
- Informal quiz
- Free-Write
- Interactive Read Aloud
- Interactive Writing

Formative Assessment
- Observation
- Running Records
- Comprehension checks
- Literacy Check-lists
- Portfolios
- Literacy Games
- Reading/Writing Journals
- Exit Slips or Activities

Summative Assessment
- Objective tests
- Final portfolio
- Write an essay
- Project
- Debate
- Literary critique
- Write a paper or poem
- Oral Reading Rubric

Varied Assessment [image]. (n.d.). Literacy Lighthouse. http://literacylighthouse.weebly.com/uploads/2/1/2/5/21253890/4173885.png?498

Diagnostic/Pre-Assessment

Diagnostic assessment, which is often times referred to as pre-assessment, is used to evaluate a student's knowledge before instruction. Pre-assessment helps teachers determine where to begin instruction and provide a baseline of the student's knowledge (Guskey & McTighe, 2016, p. 39). According to Guskey & McTighe (2016) pre-assessment provides four potential benefits.

- Determine prior knowledge
- Monitor progress
- Communicate expectations
- Focus attention on learning targets
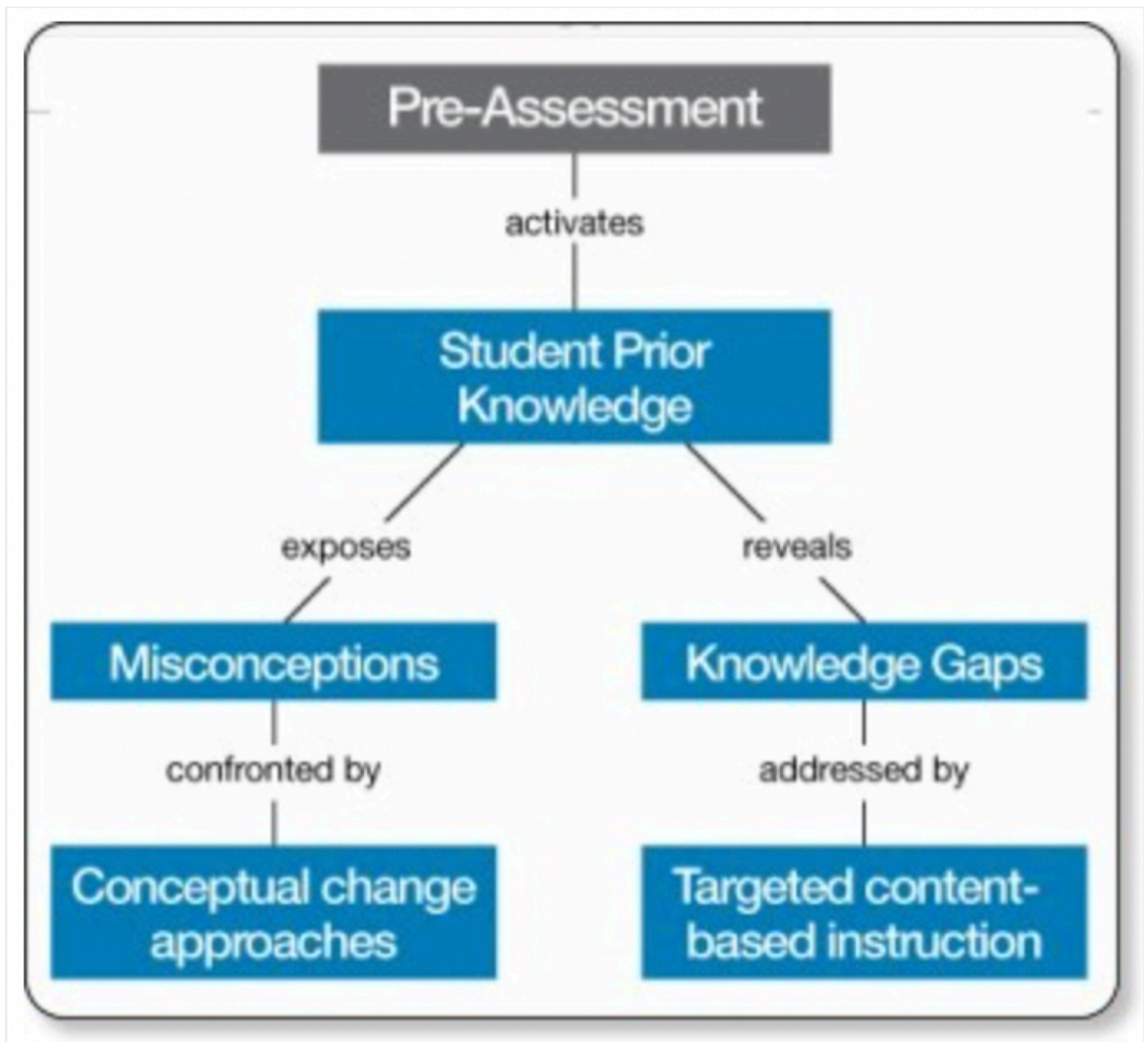
For the infant simulator assignment, students were given a pre-assessment to determine their knowledge of infant care. The pre-assessment included true/false, multiple choices, and short answer questions, which focused on the objective of the unit. This is one of two "traditional" methods of assessing students.

Formative

Formative assessment provides feedback throughout instruction. Boss states,

When teachers know how students are progressing and where they are having trouble, they can use this information to make necessary instructional adjustments, such as reteaching, trying alternative instructional approaches, or offering more opportunities for practice.

These activities can lead to improved student success. (2002, para. 2)

Formative assessment can range from a one-question exit ticket and classroom poll to student monitoring. The questioning and monitoring must be strategic to provide the teacher with data on student understanding. The Northwest Evaluation Association (2016) states that the technique used with formative assessment, asked four questions:

1. What do we want the students to learn?
2. How do we know where students are in their learning?
3. How do students know what to work on next?
4. How can we encourage students to own their learning and become resources for their peers?

Video 4 explains the purpose of formative assessments and provides the top 5 examples used in the classroom.
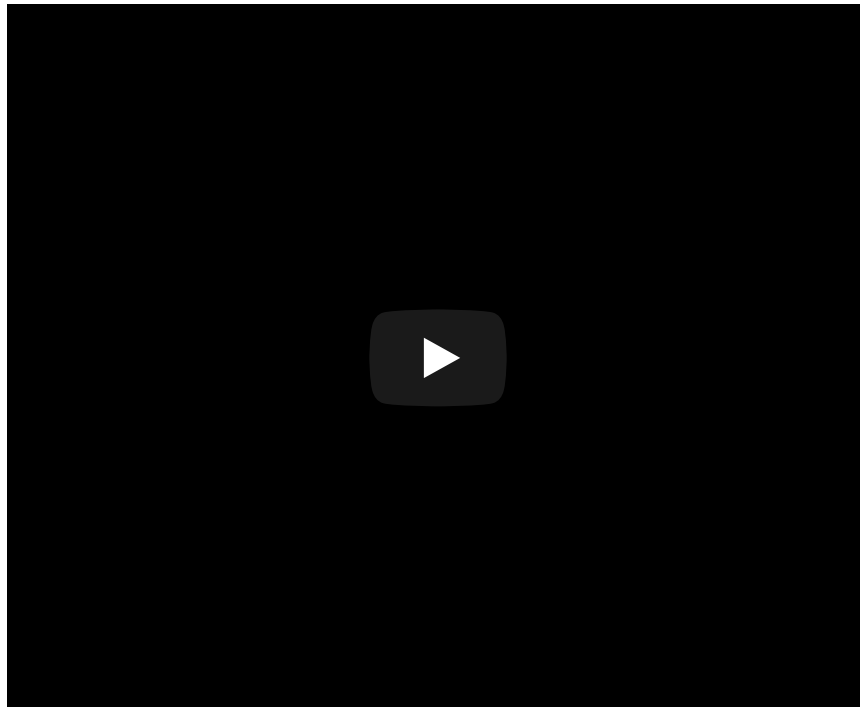
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Video 4: Teachings in Education. (2016, November 14). Formative assessments: Why, when & top 5 examples [Video]. YouTube. https://youtu.be/-RXYTpgvB5I

Throughout the 7-day infant care plan, students were given formative assessments as it relates to the care of the infant simulator. The formative assessments included classroom polls related to soothing the baby's cries and the number of night-time feedings. Exit tickets posed questions geared to collect data on the growth of student knowledge pertaining to infant care. Although the infant simulator assignment lasted 7 days, the entire unit took approximately four weeks.
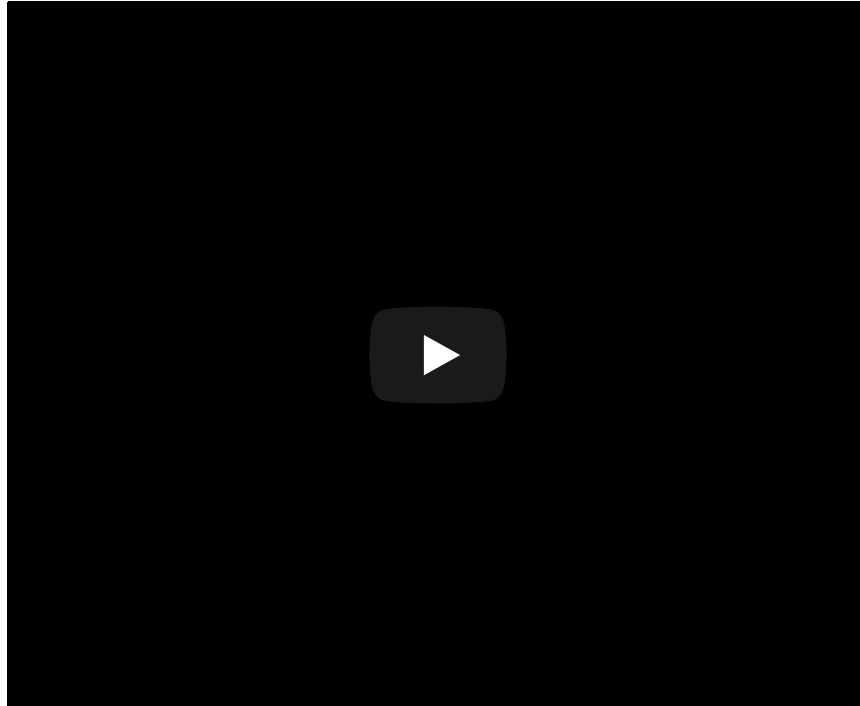
Summative

Summative assessment evaluates student learning at the conclusion of an instructional period, like a unit, and are often heavily weighted (Poorvu

Center for Teaching and Learning, n.d.).

For project-based learning, the end of the unit assessment, also known as the summative assessment, can be scored using the preferred method of a rubric. Summative assessment is sometimes identical to pre-assessments to determine if students have met the learning object. In the case of a project, a rubric is ideal in that it provides objective feedback from critieria that is determined by the teacher and the student.

An overview and examples of summative assessment are explained in the Video 5 below.


Media embedded February 16, 2021

Video 5: Teachings in Education. (2017, January 16). Summative assessment: Overview & examples [Video]. YouTube. https://youtu.be/SjnrI3ZO2tU

The summative assessment for the RealCare Baby Infant Simulator was graded using a rubric. There were so many components to the project that couldn't be assessed through a simple question and answer. Students were required to care for the baby through feeding, diapering, clothing changes, and bonding. Although the simulator recorded downloadable data for grading purposes, observations were necessary. Grading criteria also included the cleanliness of the simulator's clothing, blankets, and car seat.

Constructivism Theory and Project-Based Learning

William Kilpatrick, who is considered the founder of project-based learning believed it to be "a comprehensive teaching approach that holds potential to motivate and engage learners in tasks that support deep learning" (Roessingh & Chambers, 2011, pg. 3). Kilpatrick, like Confucius, Aristotle, Socrates, and Piaget believed that students build upon what they know by asking questions, investigating, interacting with others, and reflecting on these experiences (Boss, 2011). This is the heart of the constructivist approach to learning.
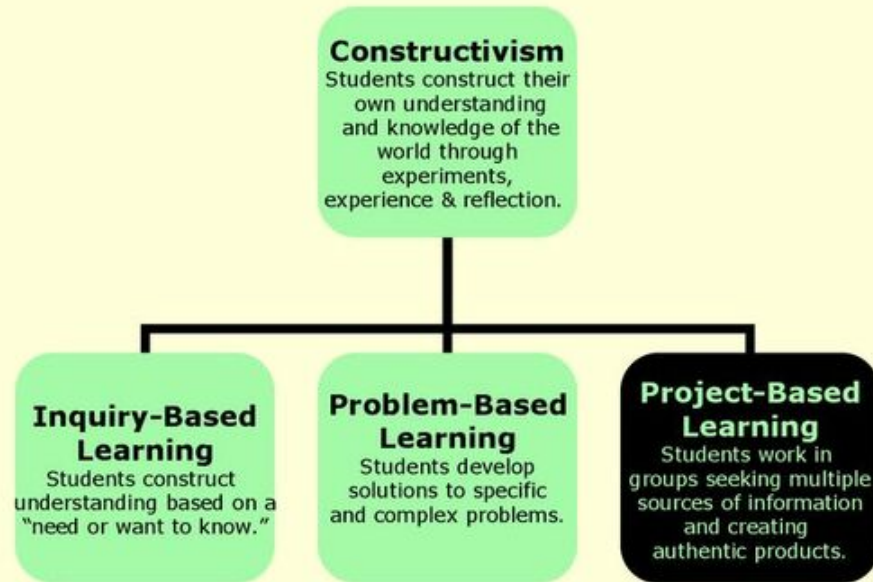
Teachers have adopted constructivism in their classrooms because it resonates with prior beliefs that constructivist-based instruction firmly places educational priorities on students' learning (Jones & Brader-Araje, 2002). In 2011, Roessingh & Chambers stated, "Project-based learning (a constructivist pedagogy) intends to bring about deep learning by allowing learners to use an inquiry-based approach to engage with issues and question that are rich, real and relevant to the topic being studied" (p. 4). According to Tamim & Grant, "As a constructivist model, (PBL) targets the building of the learner as a whole and not simply a model that aims at increased knowledge about specific content areas" (n.d., para. 3).

Another constructivist, Lev Vygotzky, believed in zones of proximal social development. For Vygotsky, learning was seen as a process. The two processes included independent problem solving and the level of occurring development when problem solving was under the guidance of a teacher or in collaboration with peers (Hausfather, 1996, p. 3).

Literary Gaps

Although plenty of information on project-based learning for core classes, such as English, math, science, and social studies, exists, the literature didn't provide much guidance for elective classes, such as Career and Technical Education programs. Since project-based learning is typically associated with STEM, the primary focus lays heavily upon that academic discipline. With many states and districts aiming towards providing students with technical and employability skills upon graduation, literature on project-based learning activities for such classes as culinary, cosmetology, and early childhood education is essential.

The projects are plentiful yet assessing those projects is often times omitted. For example, there is more to a culinary class than simply preparing a recipe. For a culinary cooking lab, the student may be required to prepare a particular meal. Assessing the student's understanding isn't just about the outcome/taste of the recipe. The student should be assessed for the selection of quality ingredients, nutritional information, and even presentation. There are different layers to assessing project-based activites.

Conclusion

Project-based learning does not come without its challenges. According to Tamim & Grant, these challenges include:

- Using the constructivist approach
- Selecting a topic selection that follows the state requirements
- Orchestrating and managing the design of the project, including planning, monitoring, scaffolding, adjusting, and troubleshooting strategies
- Assessing a project-based learning activity
- Using a collaborative environment (n.d.)

Although challenges exist, project-based learning is considered essential for 21st century learning. According to Edutopia, It provides skills related to:

- personal and social responsibility
- planning, critical thinking, reasoning, and creativity
- strong communication skills, both for interpersonal and presentation needs
- cross-cultural understanding
- visualizing and decision making
- knowing how and when to use technology and choosing the most appropriate tool for the task ("Why is project-based learning important?," 2007)

It uses authentic assessment, provides opportunities for lifelong learning, and helps students take responsibility for their learning. How teachers assess project-based learning is just as important as how it is implemented.

References

*Barron, B. J., Schwartz, D. L., Vye, N. J., Moore, A., Petrosino, A., Zech, L., Bransford, J. D., & The Cognition and Technology Group at Vanderbilt. (1998). Doing with understanding: Lessons from research on problem and project-based learning. The Journal of the Learning Sciences, 7(3/4), 271-311.

*Bell, S. (2010). Project-based learning for the 21st century: Skills for the future. The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 83(2), 39-43.

Boss, S. (2011, September 20). Project-based learning: A short history. Edutopia. https://www.edutopia.org/project-based-learning-history

Boston, C. (2002). The concept of formative assessment. Practical Assessment, Research, and Evaluation, 8(9).

Boston, C. (2002). The concept of formative assessment. Practical Assessment, Research, and Evaluation, 8(9). https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1118&context=pare

Bradford, L. (n.d.). Project-based learning integrating 21st century skills [slide]. SlidePlayer. https://slideplayer.com/slide/16785532/97/images/6/CONSTRUCTIVISM.jpg

Buck Institute of Education. (n.d.). What is PBL? PBLWorks. https://www.pblworks.org/what-is-pbl?gclid=Cj0KCQiA1KiBBhCcARIsAPWqoSryf_e3ELElD-6GwiQOF60WniLsILK-ISAclDK6hrBu6Sl1drbK2AMaApeREALw_wcB

Cornell University. (2021). Using rubrics. Center for Teaching Innovation. https://teaching.cornell.edu/teaching-resources/assessment-evaluation/using-rubrics

Gold standard PBL [Image]. (n.d.). PBLWorks. https://www.pblworks.org/sites/default/files/2019-04/gold_standard_teaching_0326.png

Grant, M. (2002). Getting a grip on project-based learning: Theory, cases, and recommendations. Meridian: A Middle School Computer Technologies Journal, 5(1).

Guskey, T., & McTighe, J. (2016). Pre-assessment: Promises and cautions. Educational Leadership, 73(7), 38-43. https://uknowledge.uky.edu/cgi/viewcontent.cgi?article=1016&context=edp_facpub#:~:text=Pre%2Dassessments%20are%20the%20instruments,to%20plot%20students'%20learning%20progress

Hausfather, S. J. (1996). Vygotsky and schooling: Creating a social context for learning. Action in Teacher Education, 18(2), 1-10.

*Institute of Politics. (n.d.). CTE and project-based learning. University of Pittsburgh. https://iop.pitt.edu/past-projects/cte-and-project-based-learning

Jalinus, N., Nabawi, R. A., & Mardin, A. (2017). The seven steps of project based learning model to enhance productive competences of vocational students. Proceedings of the International Conference on Technology and Vocational Teachers (ICTVT 2017), 102, 251-256.

Jones, M. G., & Brader-Araje, L. (2002). The impact of constructivism on education: Language, discourse, and meaning. American Communication Journal, 5(3).

McMillian, J. H. (2000). Fundamental assessment principles for teachers and school administrators. Practical Assessment Research and Evaluation, 7(8), 1-5.

PBLWorks. (2010, December 9). Project-based learning: Explained [Video]. YouTube. https://youtu.be/LMCZvGesRz8

Poorvu Center for Teaching and Learning. (n.d.). Formative and summative assessments. Yall University. https://poorvucenter.yale.edu/Formative-Summative-Assessments

RealCare Baby 3 Infant Simulator. (n.d.). Realityworks. https://www.realityworks.com/product/realcare-baby-3-infant-simulator/

RealCare baby 3 infant simulator [image]. (n.d.). Realityworks. https://www.realityworks.com/wp-content/uploads/2019/07/carseattagright2020-withaccessories-tag.jpg

Roessingh, H., & Chambers, W. (2011). Project-based learning and pedagogy in teacher preparation: Staking out the theoretical mid-ground. International Journal of Teaching and Learning in Higher Education, 23(1), 60-71.

*Shaffer, T. (2018, October 11). 10 benefits of project-based learning. Destination Imagination. https://www.destinationimagination.org/blog/10-benefits-of-project-based-learning/

Stassen, M., Doherty, K., & Poe, M. (2001). Program based review and assessment: Tools and techniques for program improvement. University of Massachusetts Amherst. http://www.umass.edu/oapa/sites/default/files/pdf/handbooks/program_assessment_handbook.pdf

Stix, A., & Hrbek, F. (2006). Teachers as classroom coaches: How to motivate students across the content areas. ASCD.

Tamim, S., & Grant, M. (n.d.). How teachers use project-based learning in the classroom. Association for Education Communications & Technology, 452-461. https://members.aect.org/pdf/Proceedings/proceedings11/2011I/11_20.pdf

Teachings in Education. (2016, December 16). Rubrics for assessment [Video]. YouTube. https://youtu.be/b4shMaSel00

Teachings in Education. (2016, November 14). Formative assessments: Why, when & top 5 examples [Video]. YouTube. https://youtu.be/-RXYTpgvB5I

Teachings in Education. (2017, January 16). Summative assessment: Overview & examples [Video]. YouTube. https://youtu.be/Sjnrl3ZO2tU

*Teachings In Education. (2017, June 15). Project based learning: Why, how, and examples [Video]. YouTube. https://youtu.be/EuzgJlqzjFw

University at Albany. (2014, December 8). Pre-assessment. The Knowledge Network for Innovations in Learning and Teaching. https://knilt.arcc.albany.edu/images/c/c3/DI2.jpg

Varied Assessment [image]. (n.d.). Literacy Lighthouse. http://literacylighthouse.weebly.com/uploads/2/1/2/5/21253890/4173885.png?498

Why is project-based learning important? (2007, October 19). Edutopia. https://www.edutopia.org/project-based-learning-guide-importance

- Paquita Elese Reedy