Put more authenticity in your teaching: Use PBL, Authentic Assessment and Rubrics

Problem/ project -based learning (PBL) provides methodological support for the cultivation of 21st century skills. It is considered that by fostering the development of the 21st century skills, students would learn to innovate and master skills necessary for the demands of the current and future workforce. PBL learning focuses on solving authentic, ill-structured problems in a case study context, conduct research, integrate theory, and practice, and apply knowledge and skills to develop a viable solution to a problem, develop a project, design artifacts, create an authentic product and reflect on the learning experiences. The authentic assessment task must be one that involves the students in carrying out activities that reflect what is done in professional practice.

The types of authentic assessment tasks include Project-based assignments, Problem-Based assignments, Presentations, Reports, Reflective pieces, Concept maps, Critical analyses, Case-based scenarios, Data analysis and Conclusion Drawing, Portfolios etc. Students are required to use prior knowledge and relevant skills to solve realistic complex problems or create a product/project. PBL is about reframing the traditional model of education. Reframing education should also mean reconceptualizing assessment methods, practices, and tools.

But how do we evaluate students' products in such learning setting? A tool to support authentic assessment is Rubric. A Rubric is an established set of criteria used for evaluating or rating student products and performances. Rubrics contain three essential features: criteria students are to attend to in completing the assignment, markers of quality (typically rating scales), and scoring. Criteria are used in determining the level at which student work meets expectations. Markers of quality give students a clear idea about what must be done to demonstrate a certain level of mastery, understanding, proficiency. There are two types of rubrics: holistic and analytic rubrics. Holistic rubrics (see appendix 1) use single criteria rubrics (one-dimensional) used to assess participants' overall achievement on an activity or item based on predefined achievement levels; Performance descriptions are written in paragraphs and usually in full sentences.

Analytic rubrics (see appendix 2) are two-dimensional with levels of achievement as columns and assessment criteria as rows. Analytic rubrics allows to assess participants' achievements based on multiple criteria using a single rubric. Educators can assign different weights (value) to different criteria and include an overall achievement by totaling the criteria; Analytic rubrics are written in a table form.

Several benefits of using scoring rubrics in performance assessments have been proposed for both educators and students.

Authentic assessment with the use of rubrics can be used as teaching tool as well. Rubrics helps students to:

- Focus their efforts on completing assignments in line with clearly set expectations.
- Self and Peer-reflect on their learning, making informed changes to achieve the desired learning level.
- connect the lessons with their experience, real world, and life in society.
- become motivated
- to monitor their progress.

Monitoring skill is a part of meta-cognitive awareness. Metacognition refers to the ability of constantly reflecting on oneself as a learner including one's learning goals, strategies, and results. Authentic assessment improves meta-cognitive awareness and thinking skill. Thinking has two forms. Lower-ordered thinking includes knowledge, comprehension, and application; while higher-ordered thinking, known as

thinking skill, includes critical and creative thinking. The two forms of thinking are inseparable and contribute one another in sharpening critical and creative thinking skills.

Learn more about Rubrics:

Authentic Assesment

At the PDC Moodle page you can find a big Rubric collection. PSU Director (Dr. Andri Vrioni) can also provide you with extra personalised support on PBL, Authentic Assessment and Rubrics.

APPENDIX 1

Research Paper Rubric

(Sample Holistic Rubric 1)

Score	Criteria
4 (80-100%)	Research paper demonstrates complete understanding and execution of the assigned objectives. Thesis statement/argument is clearly stated, complex and original, and the writing does not spend excessive time on any one point of development at the expense of developing other points in the body of the paper. Writing is also error-free, without ambiguity, and reads smoothly, creatively, and with a purpose.
3 (70-79%)	Research paper demonstrates considerable understanding and execution of the assigned objectives. Thesis statement/argument is stated, verges on the complex and original, and the writing shows accuracy and balance in developing body points, but may exhibit occasional weaknesses and lapses in correctness. Writing also has some errors and ambiguities, yet does read clearly and coherently.
2 (60-69%)	Research paper demonstrates some understanding and execution of the assigned objectives. Thesis statement/argument is faintly stated and/or expected and not confident, and the writing is inconsistent in terms of balance in developing body points, and exhibits weaknesses and lapses in correctness. Writing also has many errors and ambiguities, and may read confusingly and incoherently.
1 (50-59%)	Research paper demonstrates limited understanding and execution of the assigned objectives. Thesis statement/argument is simplistic, unoriginal, and/or not present at all, and the writing is unbalanced in developing body points, weak, and incomplete. Writing also has numerous errors and ambiguities and reads confusingly and incoherently.
Score	Criteria

Note. Retrieved from https://www.queensu.ca/teachingandlearning/modules/assessments/35_s4_05_types_of_rubrics.html

APPENDIX 2

Group Participation Rubric

(Sample Analytic Rubric 2)

Criteria	Level of Participation			
	Distinguished	Proficient	Basic	Unacceptable
Workload	Did a full share of the work—or more; knows what needs to be done and does it; volunteers to help others.	Did an equal share of the work; does work when asked; works hard most of the time.	Did almost as much work as others; seldom asks for help.	Did less work than others; doesn't get caught up after absence; doesn't ask for help.
Getting Organized	Took the initiative proposing meeting times and getting group organized.	Worked agreeably with partner(s) concerning times and places to meet.	Could be coaxed into meeting with other partner(s).	Did not meet partner(s) at agreed times and places.
Participation in Discussions	Provided many good ideas for the unit development; inspired others; clearly communicated desires, ideas, personal needs, and feelings.	Participated in discussions; shared feelings and thoughts.	Listened mainly; on some occasions, made suggestions.	Seemed bored with conversations about the unit; rarely spoke up, and ideas were off the mark.
Meeting Deadlines	Completed assigned work ahead of time.	Completed assigned work on time.	Needed some reminding; work was late but it didn't impact grade.	Needed much reminding; work was late and it did impact quality of work or grade.
Showing up for Meetings Score	Showed up for meetings punctually, sometimes ahead of time.	Showed up for meetings on time.	Showed up late, but it wasn't a big problem for completing work.	No show or extremely late; feeble or no excuse offered.
Providing Feedback Score	Habitually provides dignified, clear, and respectful feedback.	Gave feedback that did not offend.	Provided some feedback; sometimes hurt feelings of others with feedback or made irrelevant comments.	Was openly rude when giving feedback.
Receiving Feedback Score	Graciously accepted feedback.	Accepted feedback.	Reluctantly accepted feedback.	Refused to listen to feedback.

Note. Retrieved from http://www.educause.edu/ir/library/pdf/ELI3019.pdf

Oral Presentations Rubric

(Sample Analytic Rubric 3)

Category	1 Beginning	2 Developing	3 Accomplished	4 Exemplary
Content Selection	☐ Does not select relevant content.	☐ Selects insufficient content or content of limited relevance.	☐ Selects sufficient and mostly relevant content.	☐ Selects substantial and highly relevant content.
Organization	☐ Provides little or no focus or order to the material, lacks audience awareness.	☐ Provides some focus or order to the material but the structure is somewhat unclear, somewhat appropriate for the audience.	☐ Focuses and orders the material to convey a generally unified point or effect, generally appropriate for the audience.	☐ Focuses and orders the material to convey a unified point or effect, highly appropriate for the audience.
Delivery (verbal & nonverbal)	☐ Inappropriate or ineffective enunciation; pronunciation, volume, pitch, inflection, or pace seriously hinder the speaker's audibility or obstruct communication with the audience. Reading of or reference to notes, recitation. Inappropriate display or lack of energy level or empty vocalizations adversely affect the delivery. Poor posture, distracting or inappropriate body movements or gestures, or lack of eye contact interferes with the delivery.	☐ Enunciation is hampered by occasionally lazy articulation; some inappropriateness of pronunciation, volume, pitch, inflection, or pace may be noticeable but such instances do not seriously hinder the speaker's audibility. Delivery generally appears spontaneous but some moments of apparent recitation, reading of notes, or reference to notes occasionally interrupt. Inappropriate body movements, facial expressions, or gestures are occasionally noticeable.	☐ Clear enunciation; appropriate pronunciation, volume, pitch, inflection, and pace are generally maintained, but occasionally the speaker's voice is lacking somewhat in the appropriate enthusiasm or energy level. Delivery appears spontaneous throughout. A few empty vocalizations are noticeable but are not distracting. Speaker appears interested; facial expressions are consistently compatible with spoken content; body movements and gestures are usually natural, appropriate, and relaxed. Any nervous movements do not interfere with the presentation. Any lack of eye contact is only momentary.	☐ Clear enunciation; appropriate pronunciation, volume, pitch, inflection, and pace throughout. Speaker sounds genuinely interested in the topic. Delivery appears spontaneous throughout. Notes may assist but do not interrupt or control delivery. Physical presentation is appropriate and purposeful in enhancing the speaker's comments; body movements and gestures are natural, appropriate, and relaxed; eye contact is consistently maintained.
Handouts & Visual Aids (if applicable)	☐ No use of handouts or visual aids –or– Aids are inappropriate, distracting, incomprehensible, or extraneous. Speaker faces the screen, blocks audience's view of the aid, and/or does not refer to the handout.	☐ Only minimal use of handouts or visual aids –or– Handouts and/or visual aids are not quite appropriate, or are somewhat distracting, not completely comprehensible, or somewhat extraneous. Speaker occasionally faces the screen, blocks the audience's view of the aid, and/or does not refer to handout in a very appropriate or effective manner.	☐ Handouts and/or visual aids are appropriate, not distracting, generally comprehensible or not extraneous. Speaker generally faces the audience, does not block the audience's view of the aid, and/or refers appropriately to the handout.	☐ Handouts and/or visual aids are highly appropriate, not distracting, completely comprehensible, and highly relevant. They add significantly to the presentation. Speaker consistently faces the audience, does not block the audience's view of the aid, and/or the references to handouts contribute to the effectiveness.