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Finding student-author voice: a rubric for assessment in the AI era

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Finding student-author voice: a rubric for assessment in the AI era.

Objective of the Project

Increasing pressure on education systems to evolve and focus on 21st Century Skills sees a new focus on cognitive skills and project-based learning (PBL). Schools also need to adapt to the arrival of generative AI (GenAI), which provides text output in seconds resulting in concerns over skills atrophy and over-reliance on AI, while rendering traditional assessments obsolete.

Objective

- Explore the integration of GenAI in formative assessment
- Propose a new rubric for evaluating student writing as part of SEL based PBL.

Significance

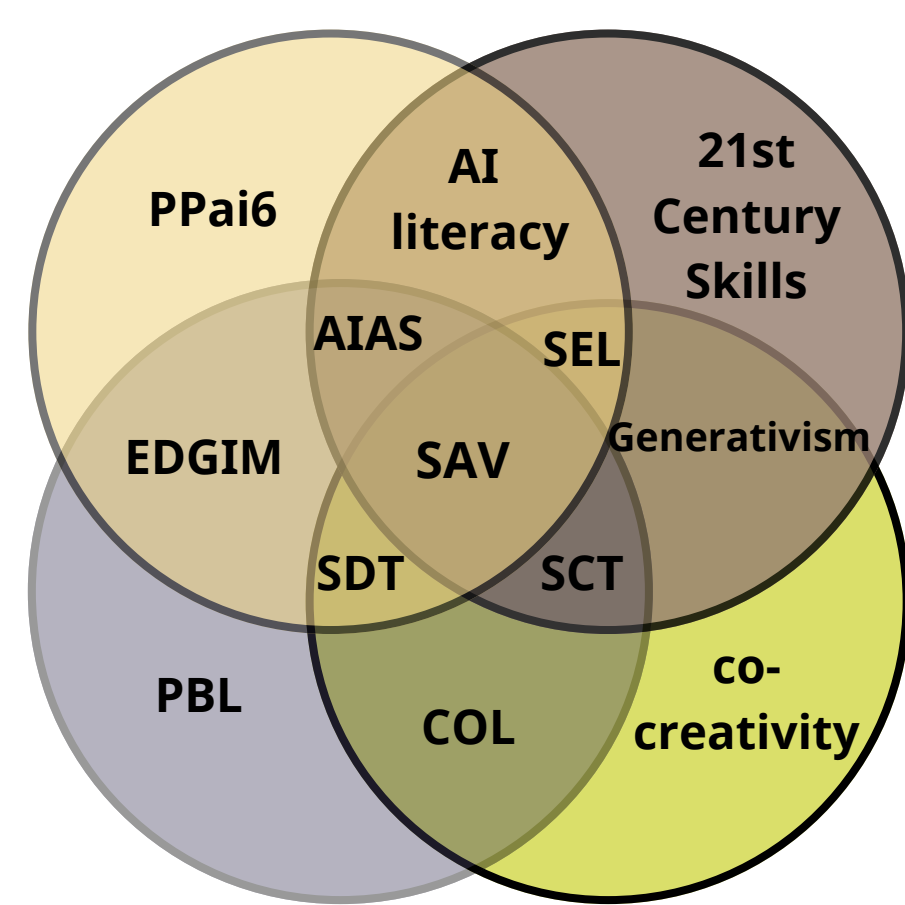
- Emphasise the importance of maintaining student-authored voice in the era of AI-assisted writing.

Purpose

- Develop a balanced approach to teaching and learning that incorporates GenAI without compromising critical thinking and writing skills.

Theoretical Background

- Self-Determination Theory
- Generativism
 - Constructivism
 - Connectivism
- Learning as a Generative Process
- PBL & EDGIM
- Flipped Assessment
- AIED frameworks and AI Assessment scales



Research on impact of AIED

In co-creation with GenAI activities most of the students:

- Felt AI helped them and made learning more enjoyable
- Felt more confident in their abilities when using AI
- Were aware of/concerned about the risks of skill atrophy

The higher the intrinsic motivation, the more they felt GenAI was helpful, the more motivated they were.



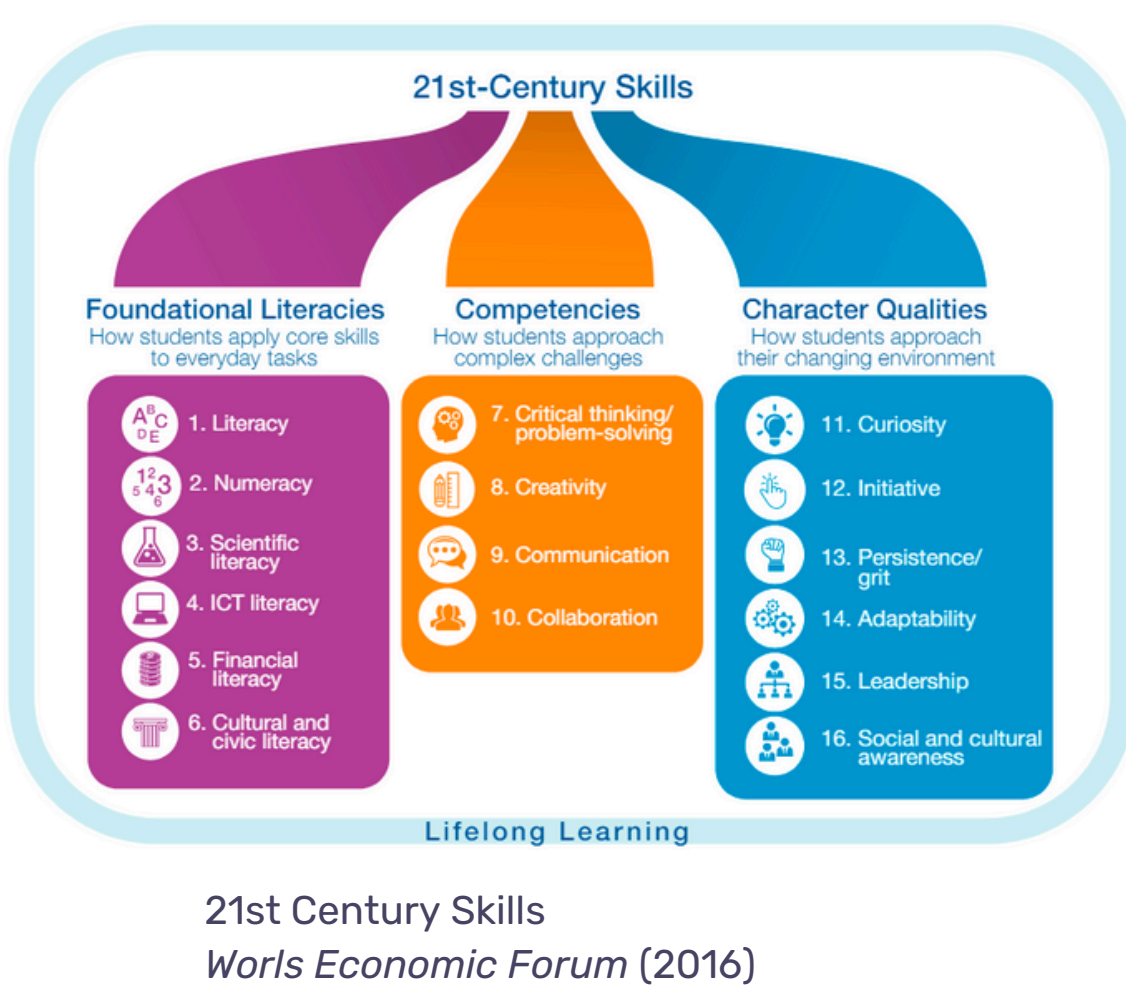
Students with lower intrinsic motivation or low self-efficacy were concerned about the impact of AI on education and/or future career.

Practical Background

- Need for new assessment parameters: over reliance on GenAI detection tools
- Need for new approach to teaching writing: by teaching students to edit for author voice, we teach students how to think critically about their writing; ESL focus on meaning of words/structure of sentences/communicative achievement
- Need to reposition writing within a broader set of skills

4 Cs of 21st Century Teaching

- Communication
- Collaboration
- Critical Thinking
- Creativity



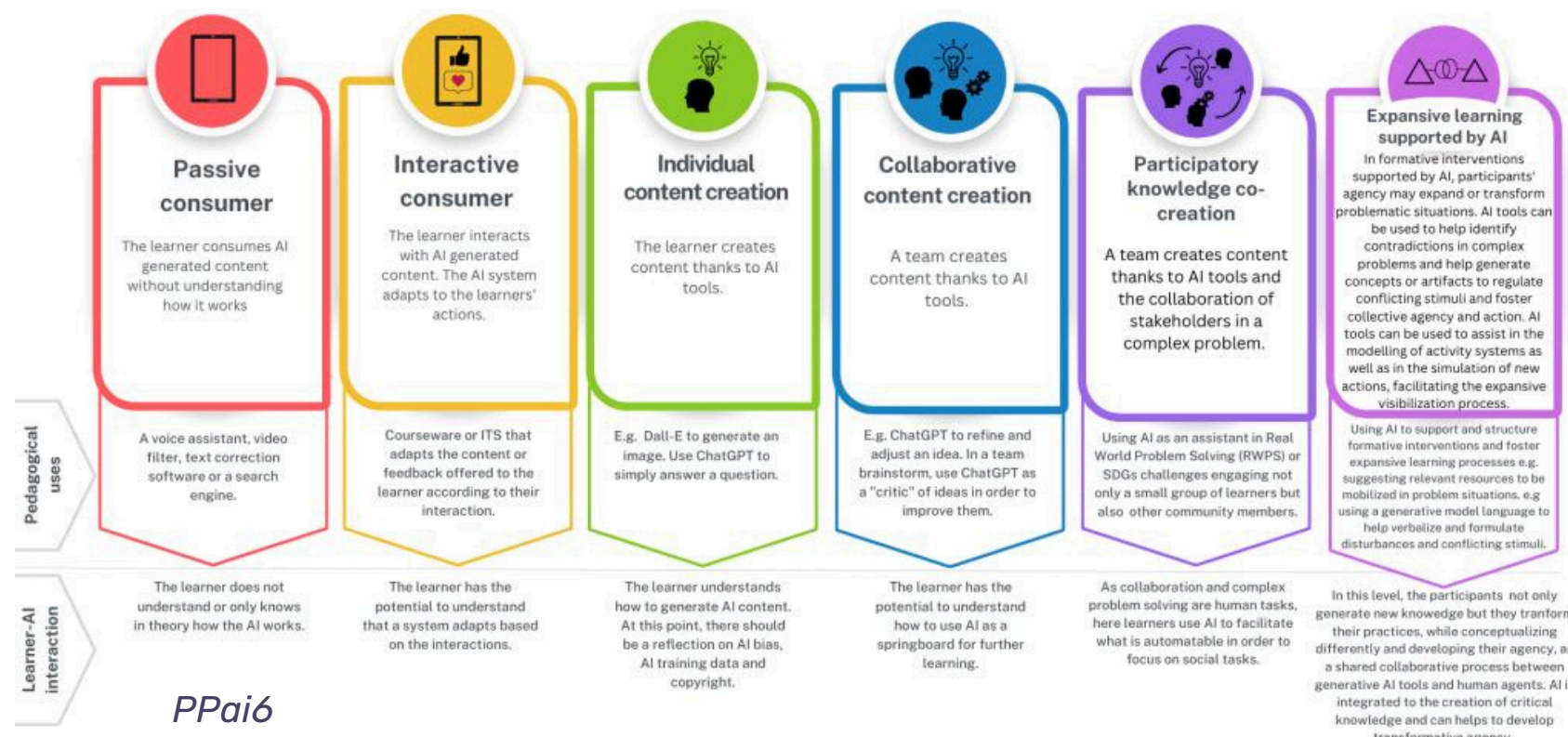
Existing Frameworks

The PPAi (Passive-Participatory) framework and subsequent rubric assess aspects of AI literacy along with 21st century skills such as creativity and communication.

- increasing complexity and depth of interaction, encourages students to move beyond passive consumption to active, critical engagement with AI
- development of critical thinking through the evolution of the learner's role as a co-creator of knowledge, stressing the importance of developing students' ability to question, interact, gain deeper understanding.

AIAS Level	Description
1 NO AI	The assessment is completed entirely without AI assistance. This level ensures that students rely solely on their knowledge, understanding, and skills. AI must not be used at any point during the assessment.
2 AI ASSISTED IDEA GENERATION AND STRUCTURING	AI can be used in the assessment for brainstorming, creating structures, and generating ideas for responding work. No AI content is allowed in the final submission.
3 AI ASSISTED EDITING	AI can be used to make improvements to the clarity or quality of student created work to improve the final output, but no new content can be created using AI. AI can be used, but your original work with no AI content must be provided in an appendix.
4 AI TASK COMPLETION, HUMAN EVALUATION	AI is used to complete certain elements of the task, with students providing discussion or commentary on the AI-generated content. This level requires critical engagement with AI generated content and evaluating its output. You will use AI to complete specified tasks in your assessment. Any AI created content must be cited.
5 FULL AI	AI should be used as a 'top-pilot' in order to meet the requirements of the assessment, allowing for a collaborative approach with AI and enhancing creativity. You may use AI throughout your assessment to support your own work and do not have to specify which content is AI generated.

AIAS Perkins, Furze, Roe, & MacVaugh. (2024)



PPAi6 Romero, Duguay, Isaac, Barma, Duret, Heiser & Lake. (2023).

Use of GenAI in education: a rubric of creative uses of GenAI.	
1. Basic prompt engineering, including text, image, and audio generation, and using AI for research and learning.	2. Advanced prompt engineering, including text, image, and audio generation, and using AI for research and learning.

Use of GenAI in education: a rubric of creative uses of GenAI Vaillant, Mériaux & Lyon. (2023)

Key Insights

- Existing frameworks focus on Co-creativity and AI literacy; particularly in STEAM or PBL Learning
- Need for domain knowledge, communication skills and writing-editing skills to properly co-author
- Adopt ESL approach to teaching writing, with a focus on student-author voice.

The Student-Author Voice Rubric

SAV measures the ability of students to author and/or use AI to effectively co-author, integrate domain knowledge, and demonstrate critical thinking and editing skills.

Skills	1 Beginning	2 Developing	3 Sufficient	4 Advanced	5 Exemplary
Balance of AI Assistance and Author Voice	Written work sounds like AI output rather than text written by a human; little to no original tone and diction.	Written work alternates between sounding like AI output and human; some evidence of original author voice.	Written work sounds mostly human; at times sounds like AI output/AI slightly overwhelms author's voice.	Written work sounds human; where AI is used to enhance the work it doesn't compromise author's voice.	Written work sounds human; AI may have been used to enhance the work but author's voice is evident throughout.
Domain Knowledge Integration	Lacks domain knowledge and relies on AI output; text is incoherent and/or does not align with the subject matter	Some domain knowledge is integrated into AI output; inconsistencies and inaccuracies are present.	Adequate domain knowledge is evident; most content aligns with the subject matter, some minor inaccuracies.	Strong domain knowledge is integrated; content aligns well with subject matter. Few inaccuracies are present.	Excellent domain knowledge is demonstrated; content is coherent and accurate.
Critical Thinking and Editing	Struggles to edit text, including AI output. Lacks critical engagement and does not recognise errors or inconsistencies	Edits text with limited effectiveness. Some critical engagement, but many errors remain.	Edits text showing good critical thinking skills, but minor issues persist.	Edits text effectively, demonstrating strong critical thinking skills. Most errors are corrected.	Exemplary editing of text. Demonstrates excellent critical thinking and corrects all errors, resulting in a polished work.

Student-Author Voice Rubric (SAV) Ni Uanachain. (2024)

Balance of AI Assistance and Author Voice:

Ensures that AI is used as a tool to enhance the work while maintaining the student's unique voice.

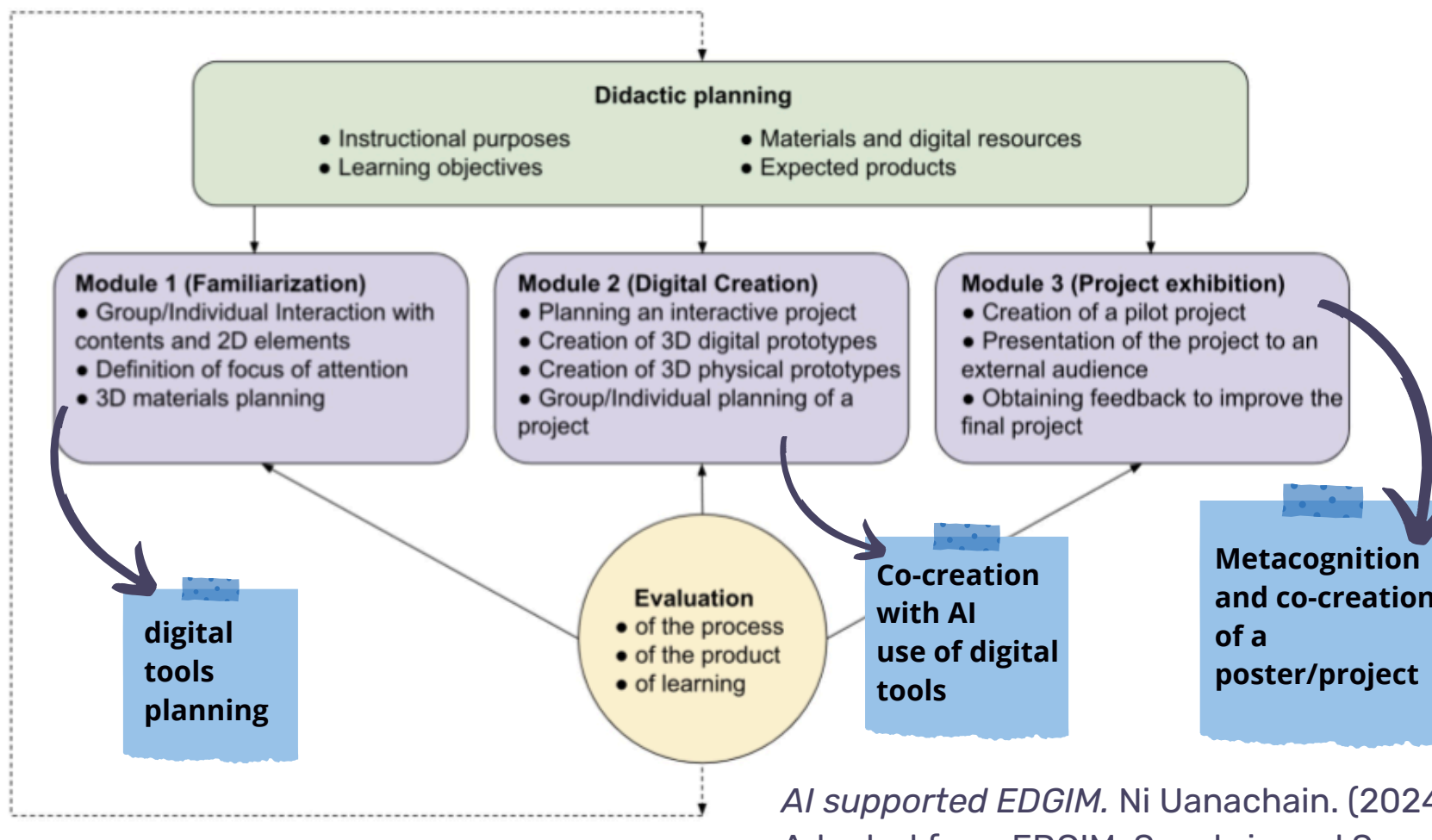
Domain Knowledge Integration:

Measures the student's ability to incorporate relevant subject matter knowledge into their work.

Critical Thinking and Editing: Assesses the student's skill in critically evaluating and refining AI-generated content.

Application and Implications

Mitigates worries over lack of skill development as students actively engage with GenAI to develop writing and editing skills producing human-sounding text as per project deliverables. Scaffolded learning; gradual immersion into complex tasks using GenAI.

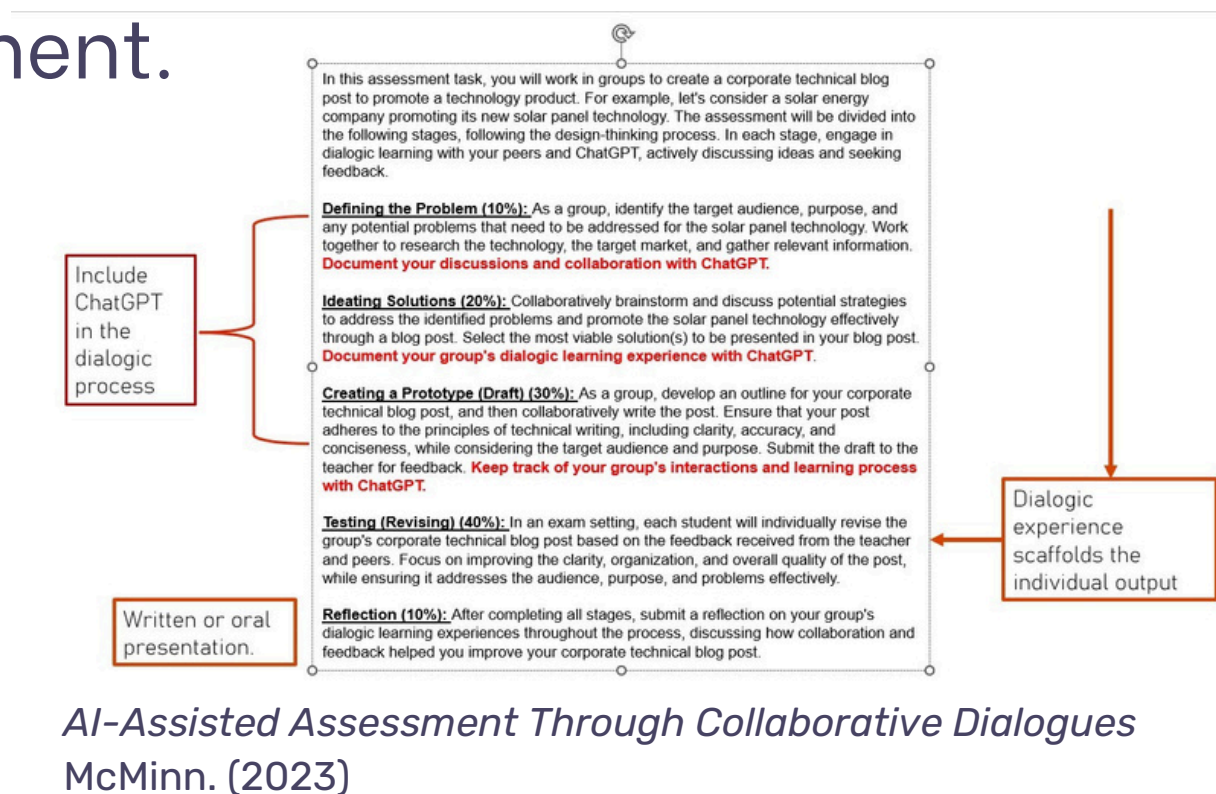


Research, Policy, and Practice

1. Need for updated assessment rubrics that recognise AI assistance.
2. Policy recommendations for ethical AI integration in education.
3. Practical strategies for teachers to balance AI use and skill development.

Strengths and Limitations

Further research on the effectiveness of the SAV rubric and exploration of additional AI-integrated pedagogical frameworks needed. Need for teacher training and potential resistance to change.



AI-Assisted Assessment Through Collaborative Dialogues McMinn. (2023)

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