

# **A Proposed Pedagogical Approach for Academic Writing Using Artificial Intelligence-Enabled Text Generating Tools: 6-P Pedagogy of Plan, Prompt, Preview, Produce, Peer-Review, Portfolio-Tracking**

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The 6-P pedagogical approach of ‘Plan writing, Prompt questions and text, Preview draft(s), Produce an assignment, Peer review, and Portfolio tracking’ promotes the productive use of Artificial Intelligence(AI)-enabled text-generating tools for the development of critical and/or reflective thinking by students. There are six phases, not necessarily sequential, but interactive and iterative in nature, when using AI-enabled text-generating tools for academic writing. First, students plan the content and structure of the writing to effectively respond to an issue, research question, or problem. This corresponds to the forethought stage of self-regulated learning (SRL), where students set goals and plan their way forward (Zimmerman, 2002). Second, students generate questions for inquiry and prompts using the text-based generative AI tools, which provide resources for thought, discussion, and further exploration. Third, the output from the tools is previewed, checked for accuracy, and screened for discrepancies. Students think critically when examining the tools’ output, supplement the output with additional knowledge and information, search for other supporting literature, and provide alternative views or arguments. The fourth phase in academic writing with AI-enabled text-generating tools is to actually produce the written content by synthesising information from the tools and other academic resources together with the individual views and personal insights of the students. Fifth, a peer-review may be required to polish the article and to ensure that the content and supporting references are reasonable. The second to fifth phases together constitute the performance stage of SRL, where students apply strategies and monitor their progress (Gentner and Seufert, 2020; Guo, 2022; Müller and Seufert, 2018). The sixth and final phase of writing academically with AI-enabled text-generating tools can be termed portfolio-tracking, which, matching the self-reflection stage of SRL, involves the students’ reflection of the writing and learning processes and the formulation of strategies for future writing and learning tasks (Alt & Raichel, 2020; Bavlı, 2022). To some extent, the adoption of the 6-P approach resonates with a writing-to-learn approach, as it may facilitate the enhancement of both writing and thinking skills, subject to further research and evaluation of its effectiveness (Nückles et al., 2020). Additionally, the 6-P approach is embedded with elements of an authoring cycle as an inquiry cycle that entails collaboration and connections with the life experiences and perspectives of the learners (Short, 2009).

## References

- Alt, D., & Raichel, N. (2020). Reflective journaling and metacognitive awareness: Insights from a longitudinal study in higher education. *Reflective Practice*, 21(2), 145–158. <https://doi.org/10.1080/14623943.2020.1716708>
- Bavli, B. (2022). Learning from online learning journals (OLJs): Experiences of postgraduate students. *Interactive Learning Environments*. Advance online publication. <https://doi.org/10.1080/10494820.2022.2061005>
- Gentner, N., and Seufert, T. (2020). The double-edged interactions of prompts and self-efficacy. *Metacognition Learning*, 15, 261–289. <https://doi.org/10.1007/s11409-020-09227-7>
- Guo, L. (2022). Using metacognitive prompts to enhance self-regulated learning and learning outcomes: A meta-analysis of experimental studies in computer-based learning environments. *Journal of Computer Assisted Learning*, 38(3), 811–832. <https://doi.org/10.1111/jcal.12650>
- Müller, N. M., and Seufert, T. (2018). Effects of self-regulation prompts in hypermedia learning on learning performance and self-efficacy. *Learning and Instruction*, 58, 1–11. <https://doi.org/10.1016/j.learninstruc.2018.04.011>
- Nückles, M., Roelle, J., Glogger-Frey, I. *et al.* (2020). The self-regulation-view in writing-to-learn: Using journal writing to optimize cognitive load in self-regulated learning. *Educational Psychology Review*, 32, 1089–1126. <https://doi.org/10.1007/s10648-020-09541-1>
- Short, K. G. (2009). Inquiry as a stance on curriculum. In S. Davidson and S. Carber (Eds.), *Taking the PYP Forward: The Future of the IB Primary Years Programme* (pp. 11–26). Great Britain: John Catt Educational Ltd.
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice*, 41(2), 64–70. [https://doi.org/10.1207/s15430421tip4102\\_2](https://doi.org/10.1207/s15430421tip4102_2)

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運用人工智能文本生成工具進行學術寫作的教學取向：「6-P 教學法」- 寫作計畫  
(Plan)、問題指令(Prompt)、預覽草稿(Preview)、產出文章(Produce)、同儕評議(Peer-  
Review)、跟進學習歷程文件(Portfolio-Tracking)

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工作文件(未經同儕評審)

本文討論「6-P 教學法」回應人工智能（AI）文本生成工具的廣泛應用。「6-P 教學法」涵概寫作計畫(Plan)、問題指令(Prompt)、預覽草稿(Preview)、產出文章(Produce)、同儕評議(Peer-Review)、及跟進學習歷程文件(Portfolio-Tracking)。「6-P 教學法」是為學生有效使用人工智能文本生成工具，並同時發展學生的獨立思考及反思能力而設。運用人工智能文本生成工具進行學術寫作可以分六個階段，這些階段不一定是順序，可以是互動亦可以是循環。首先，學生需要計劃寫作的內容和結構，以有效回應一個議題、研究方向或問題。這與自主學習（self-regulated learning）的預備思考階段相對應，學生在這個階段設定目標並規劃下一階段的工作。第二，學生設計指令向人工智能文本生成工具提出問題，為討論和進一步探索提供資訊。第三，學生預覽人工智能文本生成工具的輸出，檢查其準確性並刪除內容不一致的地方。學生在檢查人工智能文本生成工具的輸出時需要獨立思考，並主動搜尋其他文獻支持學生的觀點及論據。第四個階段是通過綜合人工智能文本生成工具的輸出和各種資訊來源，表達學生的個人觀點和見解，產出文章。第五，同儕評議可以改進文章，合理運用參考文獻，使文章更精確、內容更豐富。第二至第五階段是自主學習的表現階段，學生在這一階段運用策略監察寫作的進展。運用人工智能文本生成工具進行學術寫作的第六個也是最後一個階段是跟進學習歷程文件。它與自主學習的自我反思階段相互匹配，涉及學生對寫作和學習過程的反思，以及制訂未來寫作和學習任務的策略。某程度上，6-P 教學法與「從寫作中學習」(writing-to-learn)互相呼應，因為 6-P 教學法引導的寫作可以增強學生的寫作和獨立思考能力，但其效果有待進一步的研究和評鑑。此外，6-P 教學法還含有探究周期(inquiry cycle)之中的創作週期(authoring cycle)的元素，涉及學生互相合作並連繫其生活經驗與觀點。

## References

- Alt, D., & Raichel, N. (2020). Reflective journaling and metacognitive awareness: Insights from a longitudinal study in higher education. *Reflective Practice*, 21(2), 145–158. <https://doi.org/10.1080/14623943.2020.1716708>
- Bavlı, B. (2022). Learning from online learning journals (OLJs): Experiences of postgraduate students. *Interactive Learning Environments*. Advance online publication. <https://doi.org/10.1080/10494820.2022.2061005>
- Gentner, N., and Seufert, T. (2020). The double-edged interactions of prompts and self-efficacy. *Metacognition Learning*, 15, 261–289. <https://doi.org/10.1007/s11409-020-09227-7>
- Guo, L. (2022). Using metacognitive prompts to enhance self-regulated learning and learning outcomes: A meta-analysis of experimental studies in computer-based learning environments. *Journal of Computer Assisted Learning*, 38(3), 811–832. <https://doi.org/10.1111/jcal.12650>
- Müller, N. M., and Seufert, T. (2018). Effects of self-regulation prompts in hypermedia learning on learning performance and self-efficacy. *Learning and Instruction*, 58, 1–11. <https://doi.org/10.1016/j.learninstruc.2018.04.011>
- Nückles, M., Roelle, J., Glogger-Frey, I. et al. (2020). The self-regulation-view in writing-to-learn: Using journal writing to optimize cognitive load in self-regulated learning. *Educational Psychology Review*, 32, 1089–1126. <https://doi.org/10.1007/s10648-020-09541-1>
- Short, K. G. (2009). Inquiry as a stance on curriculum. In S. Davidson and S. Carber (Eds.), *Taking the PYP Forward: The Future of the IB Primary Years Programme* (pp. 11–26). Great Britain: John Catt Educational Ltd.
- Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory into Practice*, 41(2), 64–70. [https://doi.org/10.1207/s15430421tip4102\\_2](https://doi.org/10.1207/s15430421tip4102_2)

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