

Reviewer 3

The following are the detailed comments:

- 1/ The Introduction section contains a lot of content and seems rather verbose. Please simplify it by only keeping the most important parts.

Response to Reviewer's Comment 1:

Thank you for your valuable observation. In response to your comment, we have carefully revised the Introduction section to improve its clarity, conciseness, and focus. Redundant or overly detailed content has been removed, and only the most essential background, rationale, and objectives have been retained to streamline the narrative. The revised introduction now offers a more accessible and coherent entry point into the research, while still providing sufficient context for understanding the significance of the topic and its contribution to the literature. We appreciate your feedback, which helped us enhance the overall quality and readability of the manuscript.

- 2/ The citation of Ref. [16] is missing in the main text. Please check the full text and supplement it.

Response to Reviewer's Comment 2:

Thank you for pointing out the omission regarding Reference [16]. We have carefully reviewed the manuscript and have now included the appropriate in-text citation for Ref. [16] in the section where its content is most relevant. This reference has been integrated in a way that strengthens the theoretical foundation of the research and maintains consistency with the bibliography. We appreciate your attention to detail, which has helped improve the completeness and scholarly accuracy of the manuscript.

- 3/ Why is it said in the "Research Problem" section that the increase in population size and the use of equipment have caused the increase or diffusion of carbon dioxide? I think this statement is incorrect. The increase in carbon dioxide should be supported by specific examples.

Response to Reviewer's Comment 3:

Thank you for your thoughtful observation regarding the statement in the "Research Problem" section about the causes of carbon dioxide increase. We agree that the original phrasing may have been overly broad and lacked sufficient specificity. In response, we have revised the sentence to clarify that the rise in carbon dioxide emissions is primarily associated with increased energy consumption, industrial activities, and transportation linked to population growth and technological expansion.

- 4/ What is the basis for raising the research question? I suggest that the author expresses it in two sentences.

Response to Reviewer's Comment 4:

Thank you for your valuable suggestion. In response, we have revised the “Research Problem” section to provide a clearer justification for raising the research question, based on documented gaps in the literature and emerging needs in higher education. The research question is now expressed in two concise and logically connected sentences, highlighting the rationale and the specific focus of the research. This adjustment aims to improve clarity, strengthen the academic grounding of the research, and align with the expectations of a scholarly audience. We appreciate your recommendation, which helped enhance the precision and coherence of this part of the manuscript.

- 5/ Figure 1 should be further refined to specify which particular algorithms or methods in AI, machine learning, or deep learning can contribute to the realization of this educational model in the current research on educational intelligence.

Response to Reviewer's Comment 5:

Thank you for your insightful observation regarding Figure 2. In response, we have refined the figure to explicitly indicate specific AI algorithms and methods relevant to the educational model proposed in this research. In particular, we have added references to natural language processing (NLP), transformer-based models (e.g., GPT), generative adversarial networks (GANs) for content creation, and reinforcement learning as it relates to adaptive learning systems. These refinements are based on current developments in educational intelligence and are intended to clarify how particular technologies support key elements of the model, such as automated content generation, personalized learning experiences, and intelligent feedback. We appreciate your valuable suggestion, which has contributed to improving the technical depth and clarity of the visual representation.

- 6/ Line 477—Please cite all references using reference numbers and place the numbers in square brackets (“[]”), e.g., [1], [1–3], or [1,3].

Response to Reviewer's Comment 6:

Thank you for pointing out the inconsistency in reference formatting. In response, we have carefully reviewed the entire manuscript and corrected all in-text citations, including the one on Line 477, to conform to the journal's required style. All references are now consistently presented using square brackets, in the correct numerical format (e.g., [1], [1–3], [1,3]) as specified by the Sustainability citation guidelines. We appreciate your attention to this detail, which has helped improve the manuscript's consistency and compliance with publication standards.

7/ The format of the manuscript needs further optimization. Please pay attention to the journal's format.

Response to Reviewer's Comment 7:

Thank you for your valuable remark regarding the manuscript formatting. In response, we have carefully reviewed and revised the overall layout and structure of the manuscript to ensure full compliance with the formatting guidelines provided by *Sustainability*. This includes adjustments to section headings, in-text citations, figure and table captions, font styles, spacing, and reference formatting. We have also double-checked alignment with the journal's template to ensure consistency and presentation quality. We sincerely appreciate your observation, which helped us enhance the professional appearance and publication readiness of the manuscript.

8/ For this research, I suggest presenting a plan for further study in the future or related prospects.

Response to Reviewer's Comment 8:

Thank you for your valuable suggestion. We confirm that a section addressing future research directions has already been included in the conclusion of the manuscript. This section outlines potential areas for extending the current work, including the use of additional emerging technologies and broader application across diverse educational contexts. We appreciate your recommendation, which aligns with the long-term vision of the research and reinforces its relevance.

**I would like to thank the reviewers for their valuable and distinguished comments,
which will enhance the quality of the research.**