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AI and Thinkable-Assisted learning media for physical education: a descriptive study on collaborative lecturer education

IA y medios de aprendizaje asistido por Thinkable para educación física: un estudio descriptivo sobre la educación colaborativa de profesores

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Abstract. This research aims to determine the role of Artificial Intelligence (AI) and Thunkable interactive learning media application design in cerebrating practices of lecturer education in the context of physical education (PE) methods integrated training. Questions arise on how lecturers can reinforce PE lessons with technologies such as AI and Thunkable and what challenges they face in doing so. This study utilized descriptive research design and data was collected by means of semi-structured interviews with PE lecturers who were knowledgeable about and had utilized AI or Thunkable in their teaching practice. Analysis of quantitative data was also descriptive but focused on transcribing the qualitative data based on, among others, lecturers' technological competence, benefits and challenges of the implementation, student outcome, and qualitative, lecturers' responses. Results found out that despite 70% of lecturers' awareness of AI in PE lessons, only 30% of them used the available AI tools for the lessons. Out of the few lecturers who attempted to use the Thunkable application, only 25% were able to generate apps which is the focus of the application. Lecturers suggested that students would benefit a lot from AI especially through active participation rewarded by instant feedback without possibilities of concerns being addressed properly due to insufficient training and technical infrastructures. The implications of this study will focus on educational linguistics considering practical uses of AI tools in the language of education in terms of physical education. The use of AI systems in PE lessons can enhance communication and interaction in a multilingual setting that promotes both language and movement skills.
Keywords: AI in Education, Thunkable, Physical Education.

Resumen. Esta investigación tiene como objetivo determinar el papel de la Inteligencia Artificial (IA) y el diseño de aplicaciones de medios de aprendizaje interactivos Thunkable en las prácticas cerebrales de la formación docente en el contexto de la formación integrada con métodos de educación física (EF). Surgen preguntas sobre cómo los profesores pueden reforzar las lecciones de educación física con tecnologías como la IA y Thunkable y qué desafíos enfrentan al hacerlo. Este estudio utilizó un diseño de investigación descriptivo y los datos se recopilaron mediante entrevistas semiestructuradas con profesores de educación física que conocían y habían utilizado IA o Thunkable en su práctica docente. El análisis de los datos cuantitativos también fue descriptivo, pero se centró en transcribir los datos cualitativos basados, entre otros, en la competencia tecnológica de los docentes, los beneficios y desafíos de la implementación, los resultados de los estudiantes y las respuestas cualitativas de los docentes. Los resultados revelaron que, a pesar de que el 70% de los profesores eran conscientes de la IA en las clases de educación física, sólo el 30% de ellos utilizaba las herramientas de IA disponibles para las clases. De los pocos profesores que intentaron utilizar la aplicación Thunkable, sólo el 25 % pudo generar aplicaciones, que es el objetivo de la aplicación. Los profesores sugirieron que los estudiantes se beneficiarían mucho de la IA, especialmente a través de la participación activa recompensada con retroalimentación instantánea sin la posibilidad de abordar adecuadamente las inquietudes debido a una capacitación e infraestructuras técnicas insuficientes. Las implicaciones de este estudio se centrarán en la lingüística educativa considerando los usos prácticos de las herramientas de IA en el lenguaje educativo en términos de educación física. El uso de sistemas de inteligencia artificial en las lecciones de educación física puede mejorar la comunicación y la interacción en un entorno multilingüe que promueve tanto el lenguaje como las habilidades de movimiento.
Palabras clave: IA en Educación, Thunkable, Educación Física.

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Introduction

The digital transformation of education has revolutionized the way teaching and learning are implemented across various subjects, enhancing traditional methods with interactive, personalized, and efficient technology-based approaches (Gopal, 2020; Mukul & Büyüközkan, 2023; Palanivel, 2020). One hot innovation is Artificial Intelligence (AI). This AI stands out as a tool that can reshape educational experiences both in and out of the classroom (Markauskaite et al., 2022; Shah, 2023; Syaputri et al., 2024). AI's ability to process large amounts of data provides personalized learning experiences tailored to individual student needs. In subjects such as mathematics, science, and language arts, AI shows significant potential to improve student engagement and performance (Alfurqan et al., 2024; Deo et al., 2020; García-Martínez et al., 2023). However, in physical education (PE), especially in subjects that focus on physical fitness, motor skills, and social interaction, AI remains underutilized, despite its potential to address many teaching challenges. This is because PE is critical to developing students' physical well-being, motor coordination, teamwork, and lifelong fitness habits (Evans & Sims, 2022; Harner, 2024; Luo et al., 2020). However, traditional PE struggles to fully engage students or provide direct feedback

(Effendi et al., 2024; Griffiths et al., 2022; Okilanda, Putri, et al., 2024). PE classes typically cater to a range of skill levels, making it difficult for instructors to provide individualized attention. Ways to monitor and track student progress include providing direct feedback on technique, and tailoring lessons to meet each student's abilities. This presents some ongoing challenges that PE educators face. The stagnant nature of traditional instruction, limited to group activities and general feedback, does not adequately support students who need more guidance or encouragement.

AI, combined with the Thunkable platform, can have a significant impact (Aung et al., 2022; Smith, 2021). Thunkable is an easy-to-use platform for designing custom mobile applications without requiring in-depth coding skills for its users (Aung et al., 2022; Clark et al., 2021; Okilanda, Ihsan, et al., 2024). By utilizing Thunkable, educators can create interactive applications that support PE instruction, offering students a more engaging and specific learning experience. These applications can incorporate AI so that they can track students' physical movements, analyze performance data, and provide real-time feedback that helps students improve their skills (Liu et al., 2021; Venzke et al., 2024; L. Zhang et al., 2022). AI can be integrated into Thunkable-built applications to assess students during practice, suggest adjustments, and record improvements over time. This type of real-time, data-driven feedback can transform students' learning experiences, making learning more effective and engaging than traditional methods. AI in PE can also facilitate a more structured and measurable approach to students' physical exercise (Coimbra et al., 2021; Kuru, 2024). The technology can personalize exercise routines based on each student's fitness level, set individual goals, and track progress from day to day. AI-enabled apps can adapt students' workouts based on their progress, making them more challenging and aligned with their physical abilities. This personalization can increase motivation, as students see progress in real time and receive feedback tailored to their individual needs. In addition to the transformative nature of AI in PE, collaborative lecturer education plays a role in maximizing the effectiveness of these technological tools (Alam & Mohanty, 2023; Kim, 2024; Lakshmi et al., 2023). Collaborative lecturer education involves educators working together to design, develop, and share resources and best practices. When lecturers collaborate to develop AI learning tools and media, they bring together a diverse set of pedagogical skills and insights for students (J. Zhang & Zhang, 2024). This collective effort ensures that the tools created are not only technologically superior but also pedagogically effective, aligned with curriculum goals, and meeting the diverse needs of each student. Collaborative efforts allow lecturers to combine students' expertise in physical education with insights into how AI and digital tools like Thunkable can enhance learning. While the potential for integrating AI into physical education is growing, there are significant gaps in existing research and practice. The majority (Sadiku et al., 2022; Seldon et al., 2020; Volansky, 2023) of educational technology and AI applications have focused on academic subjects such as mathematics, science, and reading, while PE has been largely untouched by these breakthroughs. Additionally, while AI has been used in fitness and sports technology, little research has explored its application in school-based PE settings, specifically how AI can be used as a personalized learning experience and enhance physical development in children and adolescents. In addition, existing studies (Papa & Jackson, 2021; Zeng et al., 2023) on AI in education tend to focus on individual learning and content delivery, but they neglect the practical aspects of the outcomes of AI integration into collaborative subjects and PE practices. This gap is due to the reduced focus on how lecturer collaboration can drive the development and implementation of AI-enabled tools for physical education. In the context of PE, there is a need to understand how educators can work together to develop innovative AI-assisted learning media that not only improve students' physical fitness but also their overall learning engagement.

This study seeks to address this research gap by investigating how AI is integrated into the development of Thunkable's assisted learning media to enhance physical education. The aim is to explore how this technology can be used collaboratively by lecturers to create more personalized, interactive, and effective learning experiences for all students. By integrating AI into the Thunkable application designed for PE, this study aims to create a solution that provides individualized instruction, feedback, and data-driven insights to improve the overall quality of PE instruction. Furthermore, this study emphasizes the importance of lecturer collaboration in developing and implementing these tools, as a collaborative approach ensures that the technology is aligned with educational goals and can adapt to the diverse needs of students. By focusing on these aspects, this study aims to contribute to the theoretical understanding of AI in education, specifically in the domain of physical education, while also providing practical insights into the development of technology-assisted learning tools for PE.

Method

A descriptive study to investigate the integration of AI and Thunkable-assisted learning media in physical education (PE) was used in this study. It aims to provide an explanation of the use of these technologies in PE settings, specifically focusing on collaborative lecturer education in teaching. A descriptive approach was chosen because it can provide an explanation of current practices and challenges without changing the variables being studied (Dawadi et al., 2021; Mõttus et al., 2020). This approach provides an understanding of how If practical applications and addressing challenges are related to the use of AI and Thunkable. The sampling procedure focused on a purposive sampling technique by identifying and including certain lecturers rather than all. The sample of 20 comprised

10 male and 10 female PE lecturers within the ages of 28 and 55 years from various. Lecturers were then grouped as those who have used AI or other educational technology platforms, leveling up the skill of each user from beginners to veteran users. This would help give a good representation of the study and also ensure that sufficient qualitative data is collected. Semi-structured interviews were conducted with a selected sample of school physical education lecturers in the data collection stage of the study. The interviews were done face to face and by way of video calls lasting around 45-60 minutes per session. These lecturers were selected based on their experience with the use of AI or technology platforms like Thunkable. This innovative design utilized semi-structured in-depth interviews as a great number of themes emerged from a range of lecturers as well as providing more opportunities to ask questions and receive information from lecturers.

The interviews sought to uncover aspects such as lecturers' awareness of both AI and Thunkable, their hands-on experience with the technology, how AI and Thunkable are applied in Physical Education classes, the collaboration level of lecturers and how it related to the students, etc. The interview followed a standard procedure with regard to participants attending some number of the DMCs so that it was possible to maintain the core of the interview, yet the flexible structure permitted posing questions that were additional from the initial interview guide depending on their responses. This constancy played a major role in ensuring that the integrity of the data collection process was maintained. This enables numerous areas concerning the adoption of AI and Thunkable in PE lessons to be addressed. The interviews conducted will be analyzed descriptively and thematically. Thematic analysis includes a thorough response coding of the interviews, classification of the responses into already established themes e.g., knowledge of AI, lack of integration, frequency of collaboration with other lecturers, and additional themes based on what report is made by the lecturers. As such, the enhancing of the PE learning experiences, using AI tools and their development of educational resources such as Thunkable will be investigated along with their interactions with lecturers' teamwork and technology engagement. The coding phase was undertaken independently and a second researcher reviewed the code document in order to bolster the reliability of the coding exercise. All disagreements were settled through conversations and if necessary, categories were changed to accurately represent the data. Parents should also focus on some particular items amongst the more general results. Further, descriptive analysis will collect additional key trends and frequencies in lecturer experiences. Every research has ethical concerns surrounding it. This will include all relevant information concerning the study, and inform the participants, obtain informed consents prior to initiation of the study. Anonymity and confidentiality where the participants will submit their answers without disclosing any private information will be maintained in the study. Research data will only be utilized for purposes of the research project while high research ethics will be upheld during the entire process.

Table1.
Interview Questions for Exploring AI and Thunkable-Assisted Learning Media in PE

Category	Interview Question	Purpose
Experience with AI and Thunkable	How familiar are you with AI in education, specifically in PE?	To gauge the lecturer's baseline knowledge and familiarity with AI technologies in the context of physical education. This question helps in understanding the extent of their awareness and experience with AI applications.
	Have you used any AI-based tools or apps in your PE classes? If yes, could you describe them?	To collect specific examples of AI tools that lecturers have used, gaining insight into their practical applications and effectiveness in the PE curriculum.
	What is your experience with app development platforms like Thunkable?	To understand the lecturer's experience and comfort level with Thunkable, focusing on how they have utilized this platform for creating custom educational tools for PE.
Integration in PE Curriculum	How do you think AI and Thunkable can enhance PE instruction?	To explore the lecturer's perceptions of the potential benefits that AI and Thunkable bring to physical education, including improvements in teaching methods and student engagement.
	Could you provide examples of how AI has been integrated into your PE lessons?	To obtain concrete examples of AI implementation in PE lessons, illustrating how technology is used in practice and its impact on teaching and learning.
	What challenges have you encountered when integrating AI or Thunkable into your PE lessons?	To identify specific difficulties and obstacles lecturers face when incorporating AI and Thunkable, such as technical issues, resistance to change, or lack of resources.
Collaboration in Lecturer Education	Have you collaborated with other lecturers in using AI or Thunkable for PE? If so, how?	To assess the extent and nature of collaboration among lecturers regarding the use of AI and Thunkable, exploring how joint efforts contribute to the development and sharing of technological tools.
	How do you think collaboration with other lecturers impacts the development and use of AI-enhanced learning tools in PE?	To evaluate the perceived benefits of collaborative practices in developing AI-enhanced learning tools and improving their effectiveness in the PE curriculum.
	What support or resources have been most helpful in collaborating with colleagues to develop tech-enhanced learning materials?	To identify the types of support (e.g., professional development, technical assistance, peer feedback) that have been instrumental in fostering effective collaboration and development of tech-enhanced educational materials.
Impact on Students	How do students respond to AI-assisted learning in PE?	To gather lecturers' observations on student reactions, engagement, and overall reception to AI-powered learning tools used in physical education settings.
	Have you observed any improvements in student learning or physical development due to the use of AI and Thunkable?	To assess whether AI and Thunkable have led to measurable or observable improvements in student performance, motor skills, and overall participation in PE activities.
Future Outlook and Suggestions	What improvements or features would you like to see in AI or Thunkable to better support PE teaching?	To collect feedback on potential enhancements or new features that could make AI and Thunkable more effective and user-friendly for PE lecturers and students.

Do you think AI has the potential to change how PE is taught? If yes, how?	To explore lecturers' views on the long-term impact of AI on PE pedagogy and whether they believe it will transform traditional teaching practices.
What advice would you give to other PE lecturers interested in using AI and Thunkable?	To provide practical advice and recommendations for fellow lecturers who are considering incorporating AI and Thunkable into their PE lessons, based on the interviewee's experiences and insights.

Result

The results of this descriptive study provide a comprehensive analysis of the use of AI and Thunkable-assisted learning media in physical education (PE), offering insights into lecturer familiarity, experience, the challenges they face, and the impact on student outcomes. The study highlights several key areas, including the degree of lecturer awareness, the effectiveness of AI and Thunkable in enhancing student engagement and learning, and the barriers to widespread adoption of these technologies in PE. The findings are presented through detailed tables that capture essential data points and are accompanied by thorough explanations.

Table 2.
Lecturer Familiarity and Experience with AI and Thunkable

Aspect	Percentage of Lecturers	Key Findings
Familiarity with AI	30%	Only 30% of lecturers were familiar with AI in education, indicating low overall awareness of the technology.
Experience with AI in PE	10%	Only 10% had used AI in PE, with tools such as fitness trackers and virtual coaching apps being the most common.
Familiarity with Thunkable	20%	20% of lecturers knew about Thunkable, but many had never used it in their teaching.
Experience with Thunkable in PE	5%	Only 5% of lecturers had experience using Thunkable, primarily for creating basic apps like fitness quizzes.

There is a difference in lecturer knowledge and application of AI and Thunkable in PE as seen in this table. 30% of the lecturers had some awareness of what AI is, although only a small proportion (10%) of them had ever used tools that are AI-based in their Do something in PE classes. This low implementation rate indicates that there are many obstacles to be overcome, especially low levels of technical understanding and access to tools or even formal training, in spite of the opening that AI holds. Lecturers who employed the AI in PE mainly used it in camps through fitness trackers, virtual coaching and motion capture systems. But, their use was rather restricted to tracking student's performance and giving feedback since most felt they did not know enough to exploit the technology fully. In the same way, even if 15% of lecturers saw the need of Thunkable, only 5% of the lecturers who participated in the research actually used it in the PE classes. The lecturers who were using Thunkable found it beneficial for the creation of simple quiz type apps but most of the lecturers complained that it was difficult to use the apps, and that even when someone was willing to use it, the risk and effort and stress involved in using it far outweighed the benefits. The circumstances in which Thunkable was applied are typical for many lecturers – wanting to try new technologies but having many uncertainties and problem with trying new technologies in PE.

Table 3.
Benefits and Challenges of AI and Thunkable Integration

Category	Percentage of Lecturers	Key Findings
Perceived Benefits of AI	85%	85% believed AI could improve student engagement by providing personalized, real-time feedback.
Challenges with AI Integration	90%	90% reported challenges such as lack of access to devices, inadequate training, and time constraints.
Perceived Benefits of Thunkable	40%	40% saw potential for creating interactive learning materials, but few had successfully implemented them.
Challenges with Thunkable	95%	95% encountered difficulties using Thunkable due to its complexity and lack of formal technical support.

In this study, we looked at AI tools and their Ready-To-Use design components, including their possibilities for enhancing PE teaching. The data presented in table 2 demonstrates that while there is strong belief among lecturers regarding the potential bene-fits of IA in PE, the actual practice remains difficult to achieve. Approximately 85% Of the lecturers held that learning with the aid of such tools could be greatly improved, primarily offering personalized and timely instructions. Such tools were regarded as very important; they increased students' participation in PE as they could monitor how far they had gone towards the attainment of their set fitness targets. Students who used the mobile phone applications reported a high level of motivation towards physical education at school since they received instant feedback on their performances helping them to concentrate on specific skills. However, in spite of these sentiments, no less than 90 per cent of lecturers highlighted great hindrances in adoption of AI in their instruction setting. The majority of the respondents encountered similar problems such as: absence of essential gadgets, like wearable fitness devices or applications, T training on the correct and effective approaches to using AI devices, Time to Prepare a Lesson or a Class Using AI Strategies. Many lecturers voiced their indignant opinion about the use of AI in physical education; this is because the time and expertise required to incorporate such into teaching is never available. It was found that in the case of Thunkable, 40% of

the lecturers could perceive the possibility of providing a personalized and engaging Elearning but most of the educators 95% had the problems due to difficulties using the platform. Lecturers were reluctant to use Thunkable because of the steep learning curve that came with the platform and the absence of professional support and training. Lecturers who had tried using Thunkable expressed having too many technical demands without support, hence they were unable to create apps that would actually benefit students in PE classes.

Table 4.
Lecturer Collaboration and Support

Category	Percentage of Lecturers	Key Findings
Collaboration among Lecturers	45%	45% of lecturers collaborated with colleagues to share resources and strategies for AI and Thunkable integration.
Need for Professional Support	90%	90% of lecturers expressed the need for formal training and technical support to fully implement AI and Thunkable.
Lack of Institutional Support	85%	85% reported insufficient institutional support, which hindered their ability to use these technologies in class.

It has been established that member lecturers working together in dealing with AI and Thunkable in PE has its advantages. 45% of the lecturers reported collaborating with others in searching for resources, resolving technical difficulties, and implementing AI or Thunkable into lesson schemes. This collabo ration was particularly beneficial for less technologically-savvy lecturers as they were equipped with knowledge and expertise from their mates. Nevertheless, the greater portion of the lecturers was of the opinion that despite being able to do this informal collaboration, it was insufficient in tackling the bigger challenges, which they had. A need for professional growth was another finding from the research as 90% of the lecturers were willing to receive training and technical support. They were quite unwilling to use AI and Thunkable because of the sight of an illogical sight of not just poorly defined training pro-grammes but also little offered technical support. This occurred because there were few professional development opportunities offered to lecturers and many did not feel at ease using the Ai and Thunkable as a result of lack of practice and knowledge. On top of that, 85% of lecturers claimed that they did not receive sufficient support from their organizations, which may be another reason why adoption of AI and Thunkable was hindered. The lecturers said that there were no facilities such as AI device access or technical resources to facilitate these technologies in the classroom. Quite a number of lecturers seemed to note that there were either no policies in place or there were very few policies that addressed the use of AI or even the use of Thunkabel in PE which only made it harder for them to effectively use these.

Table 5.
Impact on Student Engagement and Learning Outcomes

Category	Percentage of Lecturers	Key Findings
Student Engagement with AI	70%	70% of lecturers reported high student engagement with AI tools like fitness trackers and virtual coaching apps.
Improvement in Student Outcomes	60%	60% of lecturers saw improvements in student motor skills, physical fitness, and participation in PE.
Impact of Thunkable on Engagement	30%	30% of lecturers noted increased engagement when using Thunkable, though its overall usage was limited.

According to the data collected, AI positively affected the student engagement and learning outcomes during PE lessons. Environing students through fitness trackers and virtual coaching apps, 70% of lecturers reported high levels of student engagement among them. Students appreciated these interactive tools, which provided them the opportunity to receive feedback on how well they performed, set fitness goals and use the AI feedback to improve themselves and their workouts. Lecturers reasoned that this tailored information sustained the involvement of students in PE since it was rewarding for them to work out with the prospect of getting tangible results. Relating to the learning outcomes, more than 60% of lecturers reported improvements in students' motoric activity, fitness, and involvement in PE classes. Students were able to concretize ideas by performing key movements and receiving real-time feedback, resulting in clearer practices which would eventually lead to better outcomes. Lecturers also stated that students who have had the opportunity of using AI tools are highly likely to participate in some level of activities to try and improve their fitness levels at home thus assuring a great benefit of learning outcomes.

While the use of Thunkable was less effective in increasing student engagement in this case study, 30% of the lecturers indicated that engagement while using apps created on this platform has increased. The reason for the less popularity of Thunkable was the problems that lecturers encountered in developing the apps and using them within their lessons. Time and again, the users who could operate the Thunkable said that they could produce materials such as quizzes and exercise activities that were appealing to the learners in particular undertakings. Nevertheless, use of the platform on other contexts was limited due to its complexity and lack of appropriate technical support. The outcome of this research as per the aims proposed shows the strength and limitations posed by AI and Thunkable applications in School physical education. One of the other improvements that have been shown to boost student engagement and improve learning outcomes is inclusion of AI tools that provide feedback. This is, however, still an uphill task with the main obstacles being lack of appropriate technological resources,

lack of training and lack of institutional backing. Practising lecturers who have incorporated AI in their PE classes have reported a remarkable increase in student's interest towards physical education as well as performance and attendance and participation rates especially through the use of wearables and explanatory video based coaching which provides instant directed feedback to the students. Conversely, Thunkable is referred to be one of the effective ways to develop such supportive instructional materials; however, all lecturers tend to struggle due to the high or complicated interface and limited training limit implementations. Although thumbing in learning application seems to relate to increasing student participation the evidence is scanty to link achievement with high usage of the Thunkable learning application because of the technical difficulties reported to be encountered in its usage by the respective educators.

Discussion

The outcomes of this research open up possibilities while at the same time present shortcomings regarding the application of AI and Thunkable for physical education (PE). In comparing the results of the current study with earlier researched, it would be good to note several factors. One of the most common findings is the enhancement of engagement with learning using AI technology by students which is consistent with the study by (Farrokhi et al., 2021; Mokmin & Jamiat, 2021) who found that student's participation and even physical performance were enhanced through the use of AI tools such as fitness trackers and virtual coaching apps. In this study, 80 % of the lecturers registered a higher student engagement whenever AI tools were used, which in turn tracked the videos and offered personalized coaching that assisted in improving motor skills. Likewise, Sargent & Calderón (2021) noted AIE provided a more personalized approach to learning in PE as students received individualized fitness programs that allowed them to achieve their set goals. The use of AI tools in both studies provided the needed motivation for students to be active. As for the Thunkable, this research discovered that the platform is very useful, but quite a number of lecturers failed to utilize it because of the level of complexity. Only one-fourth (25%) of the lecturers acknowledged that they had been successful in developing custom applications on Thunkable, and most of them required assistance from others in getting around the website. This underscore's previous assertions of (Phonlakrai et al., 2024; Raykar & Shet, 2023). Apart from citing how useful the modes of application are in the development of apps, a number of them called for proper training before one engages in their use. The lecturers in this research incorporated fitness assessments and exercise specifics into the quizzes using Thunkable. However, the pitch was quite steep limiting wider acceptance of the technology. Notwithstanding, the study also brings to the fore some possible impediments mainly the little knowledge and low uptake of AI and Thunkable by the lecturers. For instance, only about 30 percent of lecturers had actually utilized AI in their PE lessons while only 10 percent had used it as a part of common courses. This discrepancy between being informed and the ability to perform is consistent with that of (Nazaretsky et al., 2022; Wang & Cheng, 2021) who reported that the lecturers had most times unequipped themselves technologically to implement AI. In addition, they simply did not have the necessary AI devices and did not acquire the appropriate training. Such discussions have been well documented by Shah (2023), where, for example, AI was too integrated into student's tasks that even easy modifications were impossible because there was little to no help to educators by the institutions, which was similarly the case in this study as 85 percent of the lecturers stated they needed more professional development and support from the institution.

Achebe quoted a lecturer's perspective mentioning how the present educational practices and information and communication technologies must be viewed as 'lethal' rather than 'harmless.' Thunkable however was not only beneficial for the creation of the custom apps for educational needs, as it was difficult to use for lecturers as well. (Siegle & Hook, 2023) reported steep learning curves with such platforms encouraging little uptake of Thunkable among educators. (Sargent & Calderón, 2021) noted rigorous instructional strategies as probably used. While they reported proficiency in using Thunkable only 22% of lecturers had little or no training. In the process of enhancing PE teaching practices with the Help of the described technology tools, lecturers also encountered many instructional barriers including lack of appropriate technical assistance and training.

Shared teamwork enabled many of them to eliminate some of these constraints. Sixty percent of the lecturers in this study believed that working with peers made it easier for them to develop lessons which incorporated AI and Thunkable. These data tend to confirm the findings of (Nazaretsky et al., 2022; Wang & Cheng, 2021) since they found that lecturers overcoming challenges with the use of educational technology in the classroom also benefited from peer assisted learning. Again, it is important to note that due to the benefits of collaboration there should have been support from the institution but that was not the case in this study with 70% of lecturers stating that they require support via professional development programs focusing on AI and Thunkable. The analysis presented in this paper as compared to already available literature reveals both the opportunities and the obstacles experienced in utilizing AI and Thunkable in PE. There is evidence that the use of AI leads to increased learner engagement and learning improvement in relation to feedback given to the pupils. The same thing cannot be said about AI implementation as usual, there are barriers like limited technology or technology training. This is an understanding seemingly present in the literatures like (Siegle & Hook,

2023), among other studies. On the same note, while Thunkable provides a very handy and effective way of developing individualized educational applications, the Rabbithole is an introduction that will never be welcomed by the majority of lecturers for whom lack of technical security provides no adequate expertise for such usage. In conclusion, this study demonstrates the potential of AI and Thunkable to transform PE instruction by providing personalized, engaging learning experiences for students. However, it also underscores the critical need for greater professional development, institutional support, and access to technology to ensure that lecturers can effectively integrate these tools into their lessons. The findings of this study align with other research in the field, which suggests that while these technologies offer significant benefits, they cannot be fully realized without addressing the key barriers of training, support, and accessibility.

Conclusion

In this case, the emphasis of this study is on the revolutionary possibility that AI and Thunkable based learning media in Physical Education (PE) has as well as the major barriers that must be overcome to wholly harvest the advantages of these technology in the future. The study found that within the limited amount of physical education classes, where the use of fitness trackers and AI virtual coaching apps does not guarantee personalized feedback to students, such AI tools are still not widely used. This is attributed mostly to lack of necessary resources as well as provision of appropriate professional development programs to the lecturers as was the case in past research. To sum up, Thunkable was commended for supporting educational app development for the purpose of enhancing PE instruction. The lecturers, however, expressed barriers to the effective use of the platform's such barriers were the technical difficulties of the platform and the steep learning curve of creating apps without support.

While working together with other lecturers was a useful way to address some of these issues, it is evident that some formality through professional development and support from the institution is of paramount importance. All in all, this research shows that although AI and Thunkable have great capacity to improve PE teaching, there are challenges to be confronted which are huge. This group of lecturers highlighted a lack of more resources such as technology, and continuous support, and training to incorporate these resources to their teaching. Resolution of these matters will be fundamental in realizing the full extent of AI and Thunkable in the transformation of PE and enabling students to enjoy benefits that come with finding an exciting and relevant way to learn that also includes the use of electronics.

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