Using Artificial Intelligence for Personal, Social and Career Development: Possibilities and Challenges

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Abstract

In today's context, the use of innovative technology is helpful for student engagement, collaborative learning, personalised learning, inclusion and preparation for the future. The paper explores the use of artificial intelligence (AI) for the facilitation of personal and social competences during a curricular subject named PSCD (Personal, Social and Career Development). For our research, we invited PSCD course participants who are doing their PSCD pedagogy course at the Institute for Education (IfE). Participants attended a training on how to integrate AI during PSCD lessons. After the training, they had to create a resource that can be used in class. Following this phase, participants participated in a focus group to present the resource and to share possibilities and challenges of the use of AI during a PSCD lesson. Results from the research shed light on the possibilities, the feelings related to the use of AI, as well as the importance and the challenges of including AI in education for PSCD lessons.

Keyword

Artificial intelligence, PSCD, holistic education, competences, values, teaching and learning

Introduction

In today's reality, artificial intelligence (AI) is being used in all contexts. The European Parliament (2020) has defined AI as the "ability of a machine to display human-like capabilities such as reasoning, learning, planning and creativity" (para. 1). The use of AI is central in the digital transformation of citizens and is considered one of the EU priorities. AI is rapidly evolving, impacting various aspects of students' lives, including education. Such rapid advancements in AI technology have opened new avenues for transforming education, empowering educators to personalise learning experiences, enhancing student engagement, and streamlining administrative processes (Altrabsheh et al., 2018). The subject of Personal, Social, and Career Development (PSCD) is particularly well-suited for AI integration, offering

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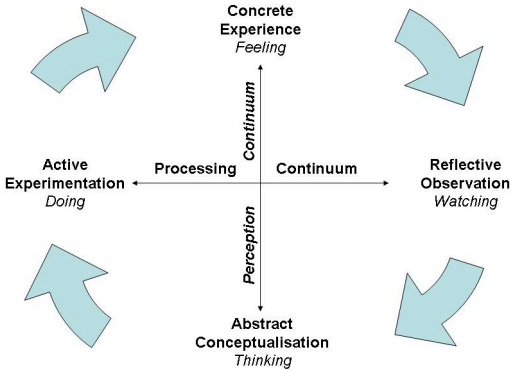
ample opportunities for enhanced and engaging learning experiences. By integrating AI into PSCD education, we can create a more effective and equitable learning environment that addresses the unique needs and aspirations of each student. AI tools can provide personalised support, tailoring educational resources to individual student needs and learning styles. This can help students develop self-awareness, understand their strengths and weaknesses, and explore career paths aligned with their interests and abilities (Baños et al., 2009). AI-powered assessments and feedback mechanisms can also provide valuable insights into student progress, enabling teachers to tailor their instruction effectively (Baños et al., 2009). In global education, the use of AI is already widespread; however, its local importance as well as the possibilities and the challenges in the statutory curricular Personal, Social and Career Development (PSCD) have not yet been explored. PSCD is a subject that is taught to all students in the Maltese Islands. It aims to develop the personal, social and career dimension of the individual, hence aiming to provide holistic education for the wellbeing and employability of children and young people (Bezzina, 2018a, 2018b; Camilleri & Bezzina, 2021, 2022; Camilleri et al., 2012; Falzon & Muscat, 2009; Muscat, 2006). The current research paper explores this research area in depth and tackles an existing dearth in research.

Personal, Social and Career Development: Theoretical Framework and Methodology

PSCD is a curricular subject that follows a set of learning outcomes that specifically aim to develop the person as a whole (Government of Malta, 2025). The subject enables the students to work on their skills, attitudes, values, competencies, and knowledge (Bezzina 2018a, 2018b). The subject is based on seven theoretical frameworks: the constructivist, the progressive, the contextual, the humanistic, the critical, the developmental and the positive. Through the constructivist approach, PSCD teachers elicit the knowledge, the values and the skills from the students and facilitate the lesson based on what the students know, what the students would have experienced and what the students need to know. In this way, PSCD is also based on humanistic and contextual theory since education in PSCD is student-centred, based on the needs of the students, and linked to the context and realities of the students. It is also based on progressive theory since it elicits the experiences of the students. Linking to positive psychological theory and critical theory, students work on their character strengths and critically evaluate the realities that are presented to them (Falzon et al., 2019; Waters & Johnstone, 2022; White et al., 2019; Wilson, 2022; Wilson et al., 2023). During the PSCD subject, students follow Kolb's Experiential Learning Cycle (Farrow, 2011), whereby the PSCD teacher presents an activity in class, which is then processed. Processing includes reflection on the activity, summary of the outcomes and the link to their real-life experience (Figure 1). Processing is aimed at group growth and learning, and it is borrowed from counselling and psychology (Camilleri et al., 2012; Falzon et al., 2019; Muscat, 2006).

Figure 1

Kolb's Experiential Learning Model (Farrow, 2011, p. 1)



Background and Rationale

This research delves into the potential of AI to enhance PSCD education. This exploration arises from a growing recognition of AI's transformative influence across diverse sectors, including education. The rapid advancements in AI technologies, particularly in natural language processing (NLP) and machine learning, have spurred interest in harnessing their capabilities to improve learning outcomes and student experiences (Ayala-Pazmiño, 2023). However, the integration of AI in PSCD education remains relatively unexplored, leaving a gap in understanding its potential impact on this critical aspect of schooling. This research aims to address this gap by investigating the perceptions, potential applications, and implications of AI for PSCD educators and their students.

The rationale for this research lies in the evolving landscape of education and the urgent need to equip students with the skills, knowledge, and values necessary to thrive in a rapidly changing world. PSCD education, encompassing personal development, social responsibility, civic engagement, and economic literacy, plays a crucial role in preparing students for life beyond the classroom (Kelleher & Tierney, 2018). With AI increasingly shaping the future of work and society, understanding its potential impact on PSCD is paramount. By exploring how AI can enhance this educational domain, this research seeks to contribute to a more effective and relevant learning experience for students, empowering them to navigate the complex challenges and opportunities presented by the digital age (Baños et al., 2009).

The Challenges of Traditional PSCD Delivery

Traditional approaches to PSCD have faced multiple challenges that have hindered their effectiveness. The most significant issue has been the lack of personalised learning experiences (Ayala-Pazmiño, 2023; Russell & Norvig, 2022). PSCD often relies on generic

programmes, failing to cater to individual student needs, strengths, and interests. This leads to disengagement and a lack of motivation among students (Ayala-Pazmiño, 2023; Russell & Norvig, 2022).

Another long-standing challenge is the limited resources and support available for PSCD teachers who often lack the necessary training and expertise to effectively implement and deliver personalised PSCD programmes (Russell & Norvig, 2022). Such a lack of professional development can limit their ability to create meaningful and engaging learning experiences (Russell & Norvig, 2022).

Furthermore, traditional PSCD programmes have often struggled to address the growing mental health concerns among students. The fast-paced and demanding nature of modern education puts significant pressure on students, leading to increased anxiety, stress, and depression (Ayala-Pazmiño, 2023). Addressing these issues requires a more comprehensive approach that integrates mental health support into PSCD programmes.

Moreover, traditional PSCD approaches have not always adequately prepared students for the rapidly changing job market. Exponential technological advancements and automation are transforming industries, demanding rapidly adaptable and future-ready graduates. This strongly implies the need for PSCD programmes to evolve to be able to integrate emerging technologies and skills required for the 21st-century workforce (Kelleher & Tierney, 2018).

AI-Powered Tools, Applications and Gamification in Learning

Artificial intelligence (AI) has infiltrated various aspects of our lives, and education is no exception. In the realm of PSCD, AI-powered tools offer a transformative potential to enhance learning experiences and empower students for the 21st century (Hattie, 2012). These tools are not meant to replace teachers but to act as valuable companions, providing tailored support and personalised guidance (Roorda et al., 2011). AI-powered platforms can analyse student data, including their strengths, weaknesses, and learning styles, to create individualised learning paths. For example, AI can identify students struggling with specific social skills and provide them with targeted interventions, like interactive simulations or personalised feedback (Durlak et al., 2011). Adaptive learning platforms can adjust the difficulty level of exercises in real-time based on a student's performance, ensuring they are challenged but not overwhelmed. AI can also deliver personalised career guidance by analysing a student's skills, interests, and potential career paths based on their performance in specific areas (Diaz et al., 2021). This can help them explore different career options and make informed decisions about their future. AI-powered virtual tutors can provide one-on-one support, answering questions, offering feedback, and motivating students to achieve their goals. This personalised approach can significantly improve student engagement, motivation, and overall academic achievement (Russell & Norvig, 2022).

These platforms offer adaptive learning content, provide real-time feedback, and offer targeted interventions to address specific needs. AI-driven chatbots and virtual assistants can provide students with immediate assistance with PSCD-related queries, such as

career exploration, resource recommendations, and emotional support (Sethi & Jain, 2024). Personalised learning platforms can leverage AI algorithms to analyse student responses, interactions, and learning patterns, identifying strengths, weaknesses, and areas for growth (López-Pérez et al., 2020). This data-driven approach allows students to gain deeper insights into their cognitive styles, learning preferences, and emotional responses, fostering greater self-understanding. AI-powered emotional intelligence assessments can measure and track students' emotional states, helping them identify and understand their feelings, build emotional regulation skills, and develop empathy for others (Liao et al., 2021). These assessments can be used to create personalised feedback, providing students with tailored strategies for managing stress, navigating challenging situations, and improving interpersonal relationships. Moreover, AI-powered simulations and role-playing scenarios can provide students with safe and controlled environments to practice and develop their emotional intelligence skills. These virtual experiences can help them navigate real-world situations such as conflict resolution, teamwork, and communication, developing crucial social skills and emotional competence (Sethi & Jain, 2024). By providing opportunities for practice and reflection, AI tools can empower students to become more self-aware, emotionally intelligent individuals, better prepared for the challenges and opportunities of the 21st century (Diaz et al., 2021).

AI can play a crucial role in addressing mental health and wellbeing challenges within educational settings. By leveraging AI-powered tools, schools can provide students with personalised support and interventions that are tailored to their individual needs (Ayala-Pazmiño, 2023). One of the significant advantages of AI-powered PSCD solutions is their inherent scalability. Unlike traditional methods, which often struggle to reach large student populations, AI can effectively cater to diverse learning needs across diverse educational settings (López-Pérez et al., 2020). This scalability is attributed to AI's ability to personalise learning experiences, providing tailored support to each student, regardless of their location or learning pace (Liao et al., 2021).

AI-driven chatbots and virtual assistants can offer confidential and accessible mental health support, providing students with a safe space to discuss their concerns and access resources (Pardo-Ballester et al., 2021). AI algorithms can analyse student data, such as academic performance, attendance, and online interactions to identify early signs of distress or potential mental health issues. AI-powered apps can provide personalised mindfulness exercises, stress-reducing techniques, and mental health tracking tools, promoting positive mental wellbeing among students (Pardo-Ballester et al., 2021). By incorporating AI into mental health initiatives, schools can create a more supportive and proactive environment that fosters student wellbeing and reduces the stigma associated with mental health. AI can also be used to develop interactive games and simulations that teach students about mental health concepts, coping mechanisms, and healthy relationships (Sethi & Jain, 2024).

Another related theme is that of gamification in learning. Gamification, the process of integrating game-like elements into non-game contexts, holds immense potential for enhancing PSCD. AI can play a crucial role in creating, engaging and personalising gamified learning experiences (Ayala-Pazmiño, 2023; Deterding et al., 2011). Through such potential,

students could possibly navigate a virtual city, where they make choices about their career paths, manage finances, and interact with virtual mentors, all while accumulating points, unlocking achievements, and receiving feedback based on their decisions (Pardo-Ballester et al., 2021). AI can tailor these experiences based on individual needs and learning styles, fostering a sense of motivation, competition, and achievement (Pellegrino & Hilton, 2013). AI can also facilitate interactive learning through simulations and virtual reality (VR) environments (Pardo-Ballester et al., 2021). Students can participate in interactive scenarios, like public speaking exercises, conflict resolution simulations, or team-building challenges (Deterding et al., 2011; Sethi & Jain, 2024). These immersive experiences allow students to practice social skills, develop empathy, and gain valuable insights into different situations in a safe and controlled environment. This interactive approach makes learning more engaging and memorable, promoting active participation and deeper understanding (Liao et al., 2021).

Ethical Considerations in AI-Driven PSCD

The use of AI in PSCD can possibly raise serious concerns about data privacy and security. Since students' personal data, including their academic performance, social interactions, and even their emotional states, could be collected and processed by AI systems, it is crucial to ensure that this data is handled responsibly. Such responsible data processing requires adhering to clear ethical guidelines (Dwivedi et al., 2023; Gašević et al., 2023; European Parliament, 2020), including:

- Transparency and accountability: Students, parents, and educators should be informed about how student data is being used and who is responsible for its processing.
- Purpose limitation: Student data should only be used for the purposes for which it was collected, and not for other unrelated purposes.
- Data accuracy: It should be ensured that the collected data is accurate, complete, and up to date. Procedures should be implemented for correcting errors and updating information.
- Data integrity: The integrity of the data should be maintained, protecting it from alteration or unauthorised changes.
- Limited data sharing: Sharing student data with third parties should be done with caution, only with explicit consent, and under strict data protection agreements.

Following these guidelines can ensure that student data is processed ethically and responsibly, respecting individual privacy and promoting trust.

Moreover, appropriate safeguards must be in place to protect students' privacy and prevent misuse (Barab et al., 2012; Gašević et al., 2023). Safeguarding student privacy requires a multifaceted approach, encompassing:

- Data minimization: Only the data that is absolutely necessary for the intended purpose should be collected, avoiding excessive or irrelevant information.
- Data anonymization: Where possible, data should be anonymised to remove personally identifiable information, making it difficult to link the data back to individual students.
- Data encryption: Encryption should be used to protect data in transit and at rest, making it unreadable to unauthorised parties.
- Access control: Robust access control mechanisms should be implemented to limit who can access student data, allowing only authorised personnel with a legitimate need for the information.
- Data retention policies: Clear policies should be developed for how long data is stored and how it is disposed of after it is no longer needed.

These measures can help ensure that student data is collected and processed responsibly, minimising risks to privacy and security (Barab et al., 2012; Dwivedi et al., 2023; Gašević et al., 2023).

AI algorithms are trained on data, and if that data reflects existing societal biases, the algorithms themselves can perpetuate those biases. This can lead to unfair outcomes for certain students, for example, by recommending different career paths based on their gender or ethnicity. It is essential to develop and deploy AI systems that are fair and equitable, minimising the impact of inherent bias (Ayala-Pazmiño, 2023).

AI systems can be complex and opaque, making it difficult to understand how they arrive at their decisions (Hutto & Gilbert, 2014). This lack of transparency can raise concerns about accountability. Efforts should be made to develop AI systems that are transparent and explainable, so that students and educators can understand how they work and why they make the decisions they do (Pellegrino & Hilton, 2013).

AI systems should not replace human teachers or diminish students' autonomy. AI should be seen as a tool to support and enhance teaching and learning, not as a replacement for human interaction. Students should have the freedom to make their own choices and develop their own skills, with AI tools providing guidance and support (Pellegrino & Hilton, 2013).

Methodology and Ethical Procedures

In addressing the present dearth in literature in this research area, we employed a qualitative research methodology inspired by interpretivist theory to explore the views of PSCD course participants who are undertaking their pedagogy course at the Institute for Education. This research aimed to contribute to academia knowledge about the application and perception of AI in PSCD education. The research questions that were addressed were:

a. What are the perspectives of Maltese PSCD teachers regarding the use of AI in their classroom pedagogies?

b. How can AI be integrated into PSCD education to enhance teaching and learning outcomes through student-centred experiential pedagogies?

c. How can various AI tools cultivate creativity in addressing the personal, social, and career dimensions of PSCD, as well as emotional literacy, mental health, and holistic wellbeing within these dimensions?

To gain an in-depth understanding of the participants' views, we invited them to a two-hour training session on the use of AI in PSCD, facilitated by Prof. Alexiei Dingli from the University of Malta (UM). This training aimed to provide a foundational understanding of AI applications in educational settings. All participants except one attended the training. The session was recorded for the absent participant to ensure they could access the information.

Participants were then invited to take part in the research study. They were provided with an information sheet and a consent form, detailing the study's purpose, and ensuring ethical transparency. Out of the target group, six participants consented to join the study. They were subsequently tasked with preparing and presenting a resource for a PSCD lesson. Following the resource presentations, participants took part in a one-hour focus group discussion that was held online using Microsoft Teams to facilitate participants' availability and allow them to share their reflections and outcomes. The discussion aimed to process their experiences, exploring the possibilities, benefits, and challenges of using AI in PSCD. Focus groups, as highlighted by Breen (2006) and Vaughn et al. (1996) are effective in generating in-depth data about real-life situations if participants listen to each other and avoid bias. The informal nature of the focus groups facilitated an exchange of ideas, providing rich qualitative data that revealed the complexity of integrating AI into educational settings.

A purposive sampling method was employed to select participants, focusing on individuals enrolled in the PSCD pedagogy course at the Institute for Education to ensure alignment with the research objectives. Both researchers, being PSCD teachers by profession, acted as insider researchers, which necessitated maintaining a reflexive process throughout the study to address potential biases and enhance credibility. Ethical standards were rigorously upheld, with ethical approval obtained from the Institute for Education. Participants were fully informed about the study's purpose and their rights, assured of confidentiality, and given the freedom to withdraw at any time without consequences.

Data Analysis

In addressing the present dearth in literature in this research area, we employed a qualitative research methodology inspired by interpretivist theory to explore the views of PSCD course

The focus group generated deep insights, which were analysed using Braun and Clarke's (2006) steps of thematic analysis. First, we familiarised ourselves with the data by immersing ourselves in the perspectives of course participants. This involved reading the transcripts multiple times and making notes to help understand the experiences conveyed. Subsequently, we began sorting and manually creating codes. As Schmidt (2004) defined, coding involves "relating particular passages in the text of an interview to one category" (p. 255). Using colouring and highlighting techniques, we identified different codes, continuing this process until a saturation point was reached. This ensured comprehensive representation of all the obtained data under appropriate codes. Subsequently, these codes were organised into the following themes.

Theme 1: Feelings attributed to the use of AI
Theme 2: Benefits and limitations of using AI for planning and facilitation of the lesson

The data analysis below is supported by excerpts from the data. Fictitious names are used to protect the identity of the participants.

Feelings Attributed to the Use of AI

> In its development, artificial intelligence has also penetrated the world of education ... The development of the times requires the world of education to adapt to technological developments to improve the quality of education, especially the adjustment of information and communication technology. Digital learning content that is developing today can be presented thanks to the application of AI. (Fitria, 2021, p. 134)

Artificial Intelligence (AI) is widely used in the field of education (Altrabsheh et al., 2018). A major theme that emerged from our research study was the range of feelings experienced during the use of AI for planning and implementation of the activity or resource. These feelings could be broadly categorised into positive, negative, and ambivalent. The positive feelings of excitement, curiosity, and optimism emerged explicitly and constantly throughout this research. It seems that excitement and anticipation were sparked by the potential of AI to augment personal and professional development. Curiosity to learn more about AI and its applications, as well as a sense of eagerness to explore its potential, also emerged from the participants' attitudes and reflections. Optimism transpired from the fact that AI is viewed as a tool for positive change and improvement, instilling optimism for a brighter future. One of the participants, Mandy, said:

Ma kontx naf li ħa jagħtini dik l-informazzjoni kollha. Bqajt iċċassata. Komda ħassejtni. Ħassejtni tajba għax meta inti tipprepara lezzjoni ara kemm iddum taħseb x'ser tagħmel u tfittex liema huma l-aħjar attivitajiet. Dan diġa' pass għalijja. Tkun taf li l-mistoqsijiet jista' jiktibhom hu mhux joqgħod jaħseb fil-mistoqsijiet, helpful ħafna.

I didn't know that it would give me all that information. I was shocked. I felt comfortable. I felt good because when you prepare a lesson, you take long to think about what you are going to do and look for the best activities. This is already a step forward for me. When you know that questions can be written by it and not have to think of questions, that is very helpful.

Mandy felt very positive, amazed and surprised about the use of AI because it facilitated her planning and it helped her to brainstorm ideas.

Conversely, participants also expressed a certain level of apprehension, scepticism, and distrust. Teachers felt at times apprehensive about the use of AI, particularly in personal development. They also explained that this apprehension could stem from uncertainty about the reliability and accuracy of AI tools. In addition, they expressed scepticism about the potential of AI to effectively guide personal growth. This scepticism might arise from concerns about AI's ability to understand complex human emotions and individual needs. In line with the literature (e.g., Ayala-Pazmiño, 2023), a lack of transparency in how AI algorithms function can lead to distrust. Participants felt uncomfortable relinquishing control of their personal development to an opaque system. John, one of the research participants, said that he felt very cautious when using it because he did not want to lose control, and he wanted to plan lessons himself whilst thinking in depth about the type of activities and processing questions, while keeping in mind the students he will be teaching.

Jien min-naħa tiegħi ma rridx li nħalli dak l-aspett tal-lesson planning jieħu over hu. I mean that type of control. Nibża' li ħa jneħħilna the thinking process. Jiena just ngħidlu activities that relate to the learning outcomes. Anything else is in my control għax inkella nħossni li qed inħalli wisq fuq xi ħadd ieħor and … ma tkunx tiegħi.

From my view, I don't want to let that aspect of lesson planning take over. I mean that type of control. I am afraid that the thinking process will be taken away. I just ask for activities that relate to the learning outcomes. Anything else is in my control because otherwise I feel like I'm leaving too much on some other side and … would not be my own.

Similar to these experiences, Shank et al. (2019) combined two studies and explored the qualitative descriptions of participants' personal experiences with an AI. The majority reported feelings of surprise, happiness, amusement, uneasiness, confusion, and amazement.

The authors reported that:

> In this data, we contend that human emotions are linked with mind perception … in this data AIs often produce outcomes that respondents perceive as extraordinary. … what constitutes an extraordinary feat for an AI depends on the current level of technology and its diffusion and enculturation into people's expectations … When the AIs exceed these expectations, some people are amazed by the outcomes… (p. 264)

In our research, the feeling of amazement was coupled with the feeling of control, which was also mentioned by Sue, who added that the use of AI made her feel in doubt about the generation of text presented. As a result, she mentioned that one needs to trust AI-generated tools.

> *Biex inkompli ma li kienet qed tgħid, trid tkun specific għax inkella ġieli …. Anki jekk għandek age group. L-ewwel kontu qed tiddiskutu jekk għandekx tafda. Li qed iddejjaqni li jien ma nafx where the source is coming from. Dan mhux dħalt ġo website-tgħid din scientific website. Min hemm behind it? It-tfal ngħidilhom toqgħodux fuq Wikipedia għax mhux dejjem ikun reliable. U jien x'garanzija għandi?*
>
> To continue with what she was saying, you must be specific because otherwise sometimes…. Even if you have an age group. You were discussing first whether you should trust. What is bothering me is that I don't know where the source is coming from. This is not accessing a website. Who is behind it? I ask children not to use Wikipedia because it's not always reliable. And what guarantee do I have?

Trust was then discussed with the participants in the focus group. Mia mentioned that she has to adapt to the needs of the group. As a result, even though she trusts the AI tools, she feels that she knows the group and their interests, hence she consults with the tools, but then feels more at ease to develop her own lesson.

> *Lili tani lesson plans, ħarist lejhom. Kien hemm activities li jogħġbuni pero jien knowing me, insibha vera difficli li nħalli chatgpt jagħmilli l-lesson. Waħda mir-raġunijiet hi jien naf l-istudenti tiegħi u naf what they feel comfortable doing. Tinsiex jien ġejja minn primarja għallura t-tfal jippreferu hands on.*
>
> It presented the lesson plans, and I looked at them. There were activities which I liked, however knowing me, I find it difficult to allow chatGPT to do my lesson. One of the reasons is that I know my students and know what they feel comfortable doing. Do not forget that I come from the primary where children prefer hands-on.

Different participants were in agreement that the AI tools they used generated positive feelings in relation to ease of lesson preparation, brainstorming of ideas and efficiency in the planning of work. On the other hand, they also were in agreement that AI tools also created the feelings of lack of control, lack of trust, and insecurity. In addition, different participants expressed their doubt of the effectiveness of AI in character formation.

Similarly, Fitria (2021) said that:

> The existence of artificial intelligence may be able to provide knowledge to students, but developing character cannot be done. That is an educator's job. How to inspire, motivate, make students become good students. So the role of the teacher in providing motivation, inspiration, and developing character are what AI cannot replace because AI is not given feelings and emotions like humans in general. In the end, if we look at technological developments, we must be able to adapt as technology advances. If we do not adjust, we as educators (teacher/lecturer) may be replaced by technology. (p. 146)

In the light of these different feelings, Fitria (2021) emphasised the fact that when AI is present within the education sector, it raises concerns by educators. This is because some educators believe that they cannot be replaced by AI. This might explain the feelings of lack of trust, insecurity and lack of control that the participants in our research experienced. This sheds light on the importance of addressing these different emotions and providing adequate training to educators (Fitria, 2021; Kopp & Stjerne Thomsen, 2023). Maskey (2020) stated that "we must also ensure that teachers are prepared and empowered to leverage artificial intelligence. Assuming these elements are addressed, the possibilities of AI-powered learning are infinite" (para 4.).

Benefits and Limitations of Using AI for Planning and Facilitation of the Lesson

"Education institutions now have the opportunity to explore the potential of learning supported by artificial intelligence" (Maskey, 2020, para. 1). The focus group participants recognised the varied possibilities of AI when planning their lessons and when facilitating lessons. This change and positive attitude towards new technologies is essential because:

> While the debate on how AI will change business is at the top of the present-day agenda, education is already being challenged to reconceptualise existing teaching and learning methods by putting AI techniques and tools into service (Owoc et al., 2019., p. 38).

Amongst the benefits, Kopp and Stjerne Thomsen (2023) listed more inclusive learning, stimulation of critical thinking and problem-solving and streamlining of teachers' workflows, allowing them to have more time to invest in relationships (Durlak et al., 2011). All participants in our research agreed that AI enhances learning by efficiently processing large amounts of data, identifying patterns, and providing tailored, interactive, and personalised learning experiences. This is in line with the research carried out by Deterding et al. (2011). Our participants further said that AI-powered tools offer scalable, 24/7 access, enabling users to learn at their own pace and from any location. Most of the benefits that they shared with us were related to the planning of the lesson, rather than the facilitation of the lesson. They agreed about the benefit of enhancing critical thinking and problem-solving through the specific, contextualised case studies presented by AI tools. Claudia, one of the participants, said that AI helped her to develop her idea and come up with an experiential activity:

Il-klassi tiegħi tal-Year 5 diga għandhom social media most of them- they are gamers u social media children. Ridt nittakilja l-outcome how media affects gender and body image. U f'moħħi pjanajt lezzjoni u f'moħħi kelli li nsib stampi differenti u nibdew d-diskussjoni hekk. Pero mbagħad meta kellna t-training mal-Profs fuq l-AI, ridt inħabbel moħħi u bdejt ngħid din ma rridhiex discussion biss. Irridha iktar interactive għax huma tfal li joqgħodu bil-qiegħda. U ktibtlu l-AI- different games related to media messages and body image and gender. U tani ħafna games differenti. Waħda minnhom kienet media messages charades games fejn tagħni ħafna eżempji ta' media messages u stereotypes li nsibu u ridna nilgħabu charades bihom.... Kieku ma kienx l-AI ma kinitx ser tiġini f'moħħi kif nikkumbina charades ma' dil-learning outcome. Jiena ġieli ghamiltha charades imma mhux ma' din l-learning outcome. So for me kienet activity vera tajba.

My Year 5 class already have social media most of them - they are gamers and social media children. I wanted to recapture the outcome how media affects gender and body image. And in my mind, I planned the lesson and in my mind I had to find different pictures and start the discussion like that. But then when we had the training with the Profs on AI, I wanted to make up my mind and started saying that I didn't just want discussion. I wanted it more interactive because they are kids who sit down. And I wrote in the AI - different games related to media messages and body image and gender. And it gave me a lot of different games. One of them was media messages charades games, where it gave me a lot of examples of media messages and stereotypes that we find and we wanted to play charades with. If it wasn't for AI, it wouldn't have come to my mind how to combine charades with this learning outcome. I have sometimes done charades but not with this learning outcome. So for me it was a really good activity.

Different participants further said that AI tools generated different options for activities and resources. For example, John stated:

Rigward il-hands on approach, ġieli jagħtini prompts minn dawk l-activities- biex nikkrea board game. So id-diversita' tal-attivitajiet dejjem bellħitni. So jekk ma jkollokx idejat, nista' mmur lura għal dak li tlabtu u ngħid dissena flok sitwazzjonijiet ħa nagħmel board game. Dak huwa s-sabiħ.

As for the hands-on approach, sometimes it gives me prompts from those activities - to create a board game. So the diversity of activities has always surprised me. So if you don't have any ideas, I can go back to what I asked for and say this year instead of situations I'm going to do a board game. That's the nice.

To increase the effectiveness, participants agreed that AI tools need to have specific prompts. Mia mentioned time as a specification, whereas others mentioned the age of the group.

All participants in our research also shared their view about the limitations of the use of AI. They mostly focused on the lack of emotional intelligence. They argued that AI systems are designed to process information and respond rationally, but they struggle with emotional nuance. Furthermore, they expressed their concern with regards to the difficulty in nuanced communication. This is because AI communication can sometimes appear robotic or insensitive, lacking the subtle cues that humans rely on. In line with what Barab et al. (2012) discovered, another limitation which our participants mentioned was data privacy. Our participants expressed their concern about the potential for misuse of personal data collected by AI systems. This was also outlined in the research carried out by Hutto and Gilbert in 2014. This can lead to individuals who may be hesitant to use AI tools as they are worried about their data being used for unintended purposes. Related to this, participants said that there are also security issues because AI systems are vulnerable to security breaches and attacks. Data breaches can result in the theft of sensitive information and compromise the integrity of AI systems (Barab et al., 2012).

In conclusion, in line with the research by Russell and Norvig (2022), when discussing benefits and limitations, participants agreed that to maximise the benefits of AI effectively and to restrict the possible limitations, individuals should embrace new technology with curiosity and a willingness to explore, remaining adaptable to ambiguity and continuous learning as AI evolves. Essential personal attributes include emotional intelligence, collaboration, and open dialogue, allowing for shared learning and resilience in navigating AI's challenges and opportunities (D'Mello & Graesser, 2012).

Recommendations

Our research provided valuable data about the use of AI in PSCD. It helped us to reflect on the following recommendations: the integration of AI within the PSCD curriculum, more teacher training and development, monitoring AI impact on PSCD, overcoming technological barriers and infrastructure, collaboration between educators and AI developers, and data privacy and security. Integrating AI into the PSCD curriculum requires rethinking how PSCD is taught, incorporating AI-powered learning experiences, interactive lessons, and providing teacher training to effectively use AI tools. Teacher training and development should emphasise hands-on workshops, understanding AI concepts, and addressing ethical concerns, with ongoing support for educators. Parental engagement should focus on fostering communication between schools and parents about AI's benefits and ethical considerations, allowing parents to contribute to AI tool selection and integration. Monitoring AI impact involves collecting data, conducting interviews, and running focus groups to evaluate the effectiveness of AI on learning and development. Overcoming technological barriers requires addressing infrastructure issues, ensuring equitable access, and managing cybersecurity to support AI in schools. Collaboration between educators and developers is key for designing effective AI tools aligned with educational needs, encouraging continuous improvement through feedback and dialogue. Data privacy and security stresses the need for strict data handling practices like anonymisation, consent, and robust security measures to protect student information. Adaptability of AI-driven PSCD highlights AI's ability to tailor

learning, adapt to job market trends, and ensure that PSCD programmes remain flexible, relevant, and future-proof.

Limitations

The research presented in this paper was limited in different ways. First, the relatively small sample size restricted the ability to generalise the findings to broader populations. This limitation highlights the need for future research to include larger and more diverse participant groups, ensuring that conclusions are more representative of varying contexts and demographics. Additionally, the dual role of the researchers as PSCD teachers by profession created the possibility of bias. While our professional experience provided valuable insights into the realities faced by PSCD teachers, it may also have influenced the interpretation of data. To mitigate this in future studies, integrating a triangulation process could enhance objectivity and strengthen the validity of the findings.

The online nature of the training and focus group session presented another limitation, particularly in observing non-verbal cues. As noted by Hutto and Gilbert (2014), non-verbal communication plays a critical role in understanding participants' emotions, engagement, and unspoken perspectives. Conducting in-person sessions or utilising advanced technologies capable of analysing non-verbal communication could address this limitation in future studies.

Conclusion

The study provides a valuable and timely exploration of the challenges faced by PSCD teachers in navigating the widespread adoption of artificial intelligence (AI). The findings shed light on the critical need for equipping educators and parents with adequate training to effectively integrate AI into educational and developmental contexts. This recommendation aligns with the broader call for lifelong learning in an era of rapid technological advancement. Moreover, the study emphasises the importance of ongoing monitoring and evaluation of AI's benefits and limitations. By systematically examining its impact on pedagogy, student outcomes, and teacher wellbeing, educators and policymakers can develop informed strategies that maximise AI's potential while mitigating its risks. This approach ensures that educators are not only supported but also empowered to adapt to this evolving reality with confidence and competence.

Notes on Contributors

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References

Altrabsheh, N., Orji, R., & Vassileva, J. (2018). Sentiment analysis in educational environments: An overview. Proceedings of the 26th Conference on User Modeling, Adaptation and Personalization (pp. 4-12). Association for Computing Machinery.

Ayala-Pazmiño, M. (2023). Artificial Intelligence in education: Exploring the potential benefits and risks. Digital Publisher CEIT, 8(3), 892-899. https://doi.org/10.33386/593dp.2023.3.182

Baños, R. M., Botella, C., Alcañiz, M., Liaño, V., Guerrero, B., & Rey, B. (2009). Immersion and emotion: Their impact on the sense of presence. CyberPsychology and Behavior, 12(6), 725-731.

Barab, S. A., Pettyjohn, P., Gresalfi, M., Volk, C., & Solomou, M. (2012). Game-based curriculum and transformational play: Designing to meaningfully position person, content, and context. Computers and Education, 58(1), 518-533.

Bezzina, A. (2018a). Personal and Social Development Practice at the University of Malta. Lambert Academic Publishing.

Bezzina, A. (2018b). Personal and social development within a European neo-liberal Maltese Education System. In M. Attard Tonna, & J. Madalinska-Michelak (Eds.), Teacher education policy and practice – International perspectives and inspirations (pp. 288-314). Foundation for the Development of the Education System.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. Qualitative Research in Psychology, 3(2), 77. DOI: https://doi.org/10.1191/1478088706qp063oa.

Breen, R. L. (2006). A practical guide to focus-group research. Journal of Geography in Higher Education, 30(3), 463-475. https://doi.org/10.1080/03098260600927575

Camilleri, S., & Bezzina, A. (2021). Learning in a circle - apparent simplicity. Pastoral Care in Education, 40(2), 1-18. DOI: https://doi.org/10.1080/02643944.2021.1938645

Camilleri, S., & Bezzina, A. (2022). Adopting the circle pedagogy - relatedness, autonomy and competence. Pastoral Care in Education, 41(4), 1-24. DOI: https://doi.org/10.1080/02643944.2022.2148173.

Camilleri, S., Caruana, A., Falzon, R., & Muscat, M. (2012). The promotion of EL through PSD: The Maltese experience. Pastoral Care in Education: An International Journal of Personal, Social and Emotional Development, 30(1), 19-37. DOI: https://doi.org/10.1080/02643944.2011.651223.

D'Mello, S., & Graesser, A. (2012). Dynamics of affective states during complex learning. Learning and Instruction, 22(2), 145-157. DOI: https://doi.org/10.1016/j.learninstruc.2011.10.001.

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining gamification. Proceedings of the 15th International Academic MindTrek Conference: Envisioning Future Media Environments (pp. 9-15). Association for Computing Machinery.

Diaz, A., Santi, A., & Blat, J. (2021). Detecting students' emotional behaviour during online tests using deep learning techniques. Computers in Human Behaviour, 118, Article 106681.

Durlak, J. A., Weissberg, R. P., Dymnicki, A. B., Taylor, R. D., & Schellinger, K. B. (2011). The impact of enhancing students' social and emotional learning: A meta-analysis of school-based universal interventions. Child Development, 82(1), 405-432, DOI: https://doi.org/10.1111/j.1467-8624.2010.01564.

Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., Baabdullah, A. M., Koohang, A., Raghavan, V., Ahuja, M., Albanna, H., Albashrawi, M. A., Al-Busaidi, A. S., Balakrishnan, J., Barlette, Y., Basu, S., Bose, I., Brooks, L., Buhalis, D., ... Wright, R. (2023). Opinion Paper: "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. International Journal of Information Management, 71(2023), Article 102642. https://doi.org/10.1016/j.ijinfomgt.2023.102642

European Parliament. (2020). What is artificial intelligence and how is it used? https://www.europarl.europa.eu/topics/en/article/20200827STO85804/what-is-artificial-intelligence-and-how-is-it-used

Falzon, R., & Muscat, M. (2009). Personal and social development in a small island community: Presenting the Maltese democratic model. Journal of the European Teacher Education Network, 4, 9-26. DOI: https://doi.org/10.1080/02643944.2011.651223.

Falzon, R., Frendo, C., & Muscat, M. (2019). Paving the way for counselling? The link between Maltese PSD model and counselling. Journal of School-Based Counseling Policy and Evaluation, 1(2), 8-26. https://doi.org/10.25774/7pa6-x214

Farrow, R. (2011). Theories of reflective learning. https://philosopher1978.wordpress.com/2011/10/04/theories-of-reflective-learning/

Fitria, T. N. (2021, December). Artificial intelligence (AI) in education: Using AI tools for teaching and learning process. Prosiding Seminar Nasional & Call for Paper STIE AAS (pp. 134-147). ISSN: 2654-6590.

Gašević, D., Siemens, G., & Sadiq, S. (2023). Empowering learners for the age of artificial intelligence. Computers & Education: Artificial Intelligence, 4, 100130. https://doi.org/10.1016/j.caeai.2023.10013

Government of Malta. (2025). Syllabi and learning outcomes. https://curriculum.gov.mt/resources/syllabi-and-learning-outcomes/

Hattie, J. (2012). Visible Learning for Teachers: Maximizing Impact on Learning. Routledge.

Hutto, C. J., & Gilbert, E. (2014). Vader: A parsimonious rule-based model for sentiment analysis of social media text. Eighth International Conference on Weblogs and Social Media (ICWSM-14), 8(1), 216-225. DOI: https://doi.org/10.1609/icwsm.v8i1.14550.

Kelleher, C., & Tierney, B. (2018). Artificial Intelligence in education: Applications and prospects. AI Magazine, 39(3), 45-49.

Kopp, W., & Stjerne Thomsen, B. (2023). How AI can accelerate students' holistic development and make teaching more fulfilling. World Economic Forum. https://www.weforum.org/agenda/2023/05/ai-accelerate-students-holistic-development-teaching-fulfilling/#SnippetTab

Liao, Y., Huang, R., Sun, C., & Li, X. (2021). Artificial intelligence in education: Opportunities and challenges from a learning science perspective. Frontiers in Education, 6, 1-7.

López-Pérez, M. V., Pérez-Rodríguez, M. A., & Gutiérrez-Santiuste, E. (2020). Artificial Intelligence in education: A review. Frontiers in Psychology, 11, 135. DOI: https://doi.org/10.3389/fpsyg.2020.00135.

Maskey, S. (2020). Artificial Intelligence In Education Transformation. https://www.forbes.com/sites/forbestechcouncil/2020/06/08/artificial-intelligence-in-education-transformation/

Muscat, M. (2006). Evaluation of the PSD programme [Unpublished Master's dissertation]. University of Malta.

Owoc, M. L., Sawicka, A., & Weichbroth, P. (2019). Artificial Intelligence technologies in education: Benefits, challenges and strategies of implementation. In M. L. Owoc, & M. Pondel (Eds.), IFIP International Workshop on Artificial Intelligence for Knowledge Management (pp. 37-58). Springer International Publishing.

Pardo-Ballester, C., Tomás, D., & López-López, M. C. (2021). Exploring the potential of chatbots in foreign language learning: A systematic review. Computer Assisted Language Learning, 34(2), 153-182.

Pellegrino, J. W., & Hilton, M. L. (2013). Education for Life and Work: Developing transferable knowledge and skills in the 21st century. National Academies Press.

Roorda, D. L., Koomen, H. M., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher-student relationships on students' school engagement and achievement: A meta-analytic approach. Review of Educational Research, 81(4), 493-529. https://doi.org/10.3102/0034654311421793

Russell, S. J., & Norvig, P. (2022). Artificial Intelligence: A Modern Approach (4th ed.). Pearson.

Schmidt, C. (2004). The analysis of semi-structured interviews. In U. Flick, E. von Kardorff, & I. Steinke (Eds.), A Companion to Qualitative Research (pp. 253-258). SAGE Publications.

Sethi, S. S., & Jain, K. (2024). AI technologies for social emotional learning: Recent research and future directions. Journal of Research in Innovative Teaching & Learning, 17(2), 213-225. https://doi.org/10.1108/JRIT-03-2024-0073

Shank, D. B., Graves, C., Gott, A., Gamez, P., & Rodriguez, S. (2019). Feeling our way to machine minds: People's emotions when perceiving mind in artificial intelligence. Computers in Human Behavior, 98, 256-266. https://doi.org/10.1016/j.chb.2019.04.001

Vaughn, S., Schumm, J. S., Sinagub, J., & Sinagub, J. M. (1996). Focus group interviews in education and psychology. Sage.

Waters, L., & Johnstone, A. (2022). Embedding well-being into school: A case study of positive education before and during COVID-19 lockdowns. Journal of School and Educational Psychology, 2(2), 60-77. https://doi.org/10.47602/josep.v2i2.15

White, C. A., Uttl, B., & Holder, M. D. (2019). Meta-analyses of positive psychology interventions: The effects are much smaller than previously reported. PloS One, 14(5), e0216588. DOI: https://doi.org/10.1371/journal.pone.0216588.

Wilson, A. J. (2022). The six pillars of teaching and learning: Towards pedagogies of risk in P-20 classrooms. Journal of Curriculum and Pedagogy, 21(3), 1-23. DOI: https://doi.org/10.1080/15505170.2022.2154290.

Wilson, R., Sellman, E., & Joseph, S. (2023). 'Doing well' and 'being well' – secondary school teachers' perspectives. British Educational Research Journal, 49(5), 987-1004. https://doi.org/10.1002/berj.3878