

Artificial Intelligence and Self-Directed Learning in Higher Education: Guyanese Students' Perspectives from Youth and Community Development Programme

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Abstract: The rapid integration of artificial intelligence in higher education has reshaped teaching and learning practices, particularly in relation to self-directed learning. Self-directed learning has become a critical component of contemporary education, enabling students to design their own learning through autonomy, reflection, and critical thinking. However, while artificial intelligence tools offer unique opportunities to personalise learning experiences and support independent study, there are concerns regarding overreliance, ethical implications, and reduced human interaction. This study explores students' perspectives on artificial intelligence and self-directed learning among students enrolled in the Bachelor of Youth and Community Development Programme at the University of Guyana. The study was guided by the constructivist learning theory, which emphasises knowledge construction through experience and reflection. A qualitative research design was employed, utilising a purposive sampling to select 12 BYD students across years one to three. Data were collected through online semi-structured interviews conducted via the Zoom platform and analysed using thematic analysis supported by digital transcription and qualitative analysis tools. The findings reveal that students generally perceive artificial intelligence tools as a valuable support to self-directed learning, particularly in terms of efficiency, access to information, and motivation. Participants indicated that artificial intelligence tools assisted with summarising content, clarifying concepts, and extending learning beyond lectures. However, the study also identified notable challenges, including generic or inaccurate outputs, limited contextual relevance, reduced critical engagement, and ethical concerns related to data privacy and academic integrity. A key tension emerged between the convenience of artificial intelligence-supported learning and the perceived loss of interpersonal and deeper cognitive engagement associated with traditional learning methods. The study concludes that artificial intelligence has both positive and negative implications for self-directed learning; while it can enhance autonomy and learning efficiency, its effective use requires deliberate pedagogical guidance, ethical awareness, and critical evaluation skills. The study offers implications for educators and higher education institutions seeking to integrate artificial intelligence responsibly to support meaningful, ethical, student-centred learning experiences.

Keywords: Artificial Intelligence, Self-Directed Learning, Artificial Intelligence Tools, Higher Education, Qualitative Research.

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I. INTRODUCTION

Artificial intelligence has become a defining feature of contemporary higher education, transforming how students learn, how educators teach come out and how institutions operate. Globally, universities are adopting AI driven tools such as intelligent tutoring systems, automated assessment platforms, adaptive learning technologies, and generated AI applications. UNESCO (2003), Identifies artificial intelligence as a central component of digital transformation agenda come and support the development of 21st century competence. As in a becomes increasingly embedded in

educational systems, understanding its influence and student in learning behaviours particularly self-directed learning has become a critical area of inquiry.

In the Caribbean, and Guyana specially, the integration of AI into higher education is emerging within a context marked by infrastructural constraints, uneven digital literacy and ongoing efforts to modernise educational systems. National initiatives such as the Guyana Online Academy of Learning (GOAL) and the Ministry of Education's ICT in Education Strategy have expanded access to digital tools and online learning platforms. These developments have created

new opportunities for students to engage with AI-enhanced learning environments. However, empirical research examining how Guyanese students experience Artificial intelligence in their learning remains limited.

Self-Directed learning is widely recognised as a core of competency in higher education. It involves learners taking initiative in diagnosing their learning need, setting goals, identifying resources and implementing strategies and evaluating outcomes (Brandt,2020; Robinson & Persky,2019). In Digital learning environments come on self-direct learning is increasingly mediated by technology, with artificial intelligence tools offering personalised feedback, instant explanations, and adaptive learning pathways. Scholars such as Tarek Shal et al. (2024) argue that AI can strengthen self-direct learning by enabling learners to access tailored resources and monitor their progress more effectively. Yet concerns persist. Hongke (2020) warns that excessive reliance on AI may reduce students' capacity for critical thinking, creativity and independent problem solving. Ethical issues such as data privacy, algorithmic bias and academic integrity, further complicate the role AI in education (Slade &Ungerer,2022; Ifenthaler et al.,2024).

➤ *Background*

These tensions are particularly relevant for students in the Bachelor of Youth and Community Development Programme at the University of Guyana. The programme emphasises reflective practice, community engagement, and independent inquiry, group of competencies that are closely aligned with tenants of Self-Directed Learning. However, many students enter the programme with limited prior exposure to self-directed learning or advance digital tools. As artificial intelligence becomes more prevalent in their academic routines, understanding how these students perceive and utilise artificial intelligence is essential for supporting their development as autonomous learners and future youth and community practitioners.

➤ *Research Question*

This study aims to explore students' perspectives on artificial intelligence and self-directed learning among students enrolled in the Bachelor of Youth and Community Development Programme at the University of Guyana. The research is guided by the following questions:

- How do students perceive the integration of AI technologies in their learning environment?
- What are the key challenges and opportunities associated with using AI for self-directed learning?
- How does AI influence students' self-directed learning behaviour and outcomes?

➤ *Significance of the Study*

The significance of this study lies in its potential to inform educators, policymakers and institutions about the realities of AI-mediated learning in Guyana. By grounding the analysis in the lived experiences of students, the research provides contextually relevant insights that can guide curriculum design, digital literacy initiatives, and institutional policies on AI use. Furthermore, the study

contributes to global discussions on AI in education by offering perspectives from a developing country context that is often underrepresented in academic literature.

II. LITERATURE REVIEW

Artificial intelligence has become a transformative force in higher education, reshaping how students access information, engage with academic tasks, and develop self-directed learning competencies. This literature review synthesises contemporary academic literatures on AI in education with a particular focus on Self-Directed Learning, student engagement, ethical considerations and the broader higher education context.

➤ *Artificial Intelligence in Higher Education*

Artificial intelligence is broadly defined as the capacity of computer system to perform tasks traditionally associated with human intelligence, including reasoning, learning and language processing (Encyclopaedia Britannica, 2024). In education context, AI applications include intelligent tutoring systems, adaptive learning platforms, automated assessment tools and generative AI systems (Holmes et al.,2022). Holmes et al., (2022) argue that AI is reshaping the epistemological foundations of education by altering how knowledge is accessed and constructed. AI driven systems can personalise learning pathways, provide immediate feedback, and support students in navigating complex academic tasks. Research by Pane et al., (2017) supports the statement that AI has the potential to significantly enhance learning outcomes by enabling personalised learning experiences tailored to individual student needs. However, scholars like Selwyn (2019), caution that the effectiveness of AI depends on how it is integrated pedagogically rather than its mere presence in the learning environment. Hence, the benefits of AI are accompanied by concerns about accuracy, bias and the potential erosion of traditional academic skills. In addition, Broadbent & Poon (2005), alluded that without adequate support, students may struggle to navigate learning independently, particularly in online or technology-mediated environments.

➤ *Self-Directed Learning in the Digital Age*

Self-Directed Learning is a central competency in higher education, particularly in programmes that emphasise reflective practice, community engagement and independent inquiry, such as the BYD programme at the University of Guyana. Self-Directed Learning involves learners taking initiative in diagnosing their learning needs, setting goals, identifying resources, implementing strategies, and evaluating outcomes (Brandt, 2020; Robinson & Persky, 2019). In digital learning environments, self-directed learning is increasingly mediated by technology. Lee and Park (2023) noted that self-directed learning in the digital age requires not only autonomy but also digital literacy, critical evaluation skills, and the ability to navigate complex information ecosystems. Artificial intelligence tools can support these processes by offering personalised feedback, generating explanations, and helping students organise their learning. However, Lai (2022) cautions that self-directed

learning also requires metacognitive engagement. If students rely excessively on AI-generated answers, they may bypass the reflective thinking necessary for deep learning. This tension is particularly relevant for students who are new to self-directed learning or who lack confidence in their academic skills.

➤ *Artificial Intelligence and Personalised Learning*

One of the most widely cited benefits of AI in education is its capacity to personalise learning. Adaptive learning systems analyse student performance data to adjust difficulty levels, recommend resources, and provide targeted feedback (McGraw & Bannister, 2020). These systems can enhance engagement and improve learning outcomes by aligning instruction with individual needs. Recent studies such as, Chen et al.,2023; Al-Azawei & Al Hamad,2024) suggest that AI-driven personalisation can support students who struggle with traditional learning methods. However, these scholars also emphasises that AI can not fully replicate the nuanced pedagogical judgement of human educators. Personalisation may be limited by algorithmic constraints, data quality and the inability of AI to interpret contextual or cultural nuances.

➤ *Artificial Intelligence, Student Engagement and Learning Behaviours*

Artificial intelligence tools can enhance student engagement by providing interactive learning environments, immediate feedback and accessible explanations. Namjoo et al. (2023) found that students appreciate the efficiency and clarity offered by artificial intelligence assisted self-study tools. These tools helped students navigate complex topics and maintain motivation. However, the literature also highlights challenges. Yildirim et al (2023) note that students may struggle to integrate AI tools effectively without adequate guidance. Technical issues, limited digital literacy, and uncertainty about how to use AI responsibly can hinder engagement. A recurring concern is the potential for AI to reduce cognitive effort. Hongke (2020) warns that students may become passive recipients of AI-generated information, leading to superficial learning and diminished critical thinking. This risk is particularly salient in contexts where students are still developing academic skills.

➤ *Artificial Intelligence and Student Autonomy*

artificial intelligence impact on student autonomy is complex. On one hand, AI tools can empower students by enabling them to explore topics independently, clarify misunderstandings, and access diverse resources. On the other hand, I may in advertently undermine autonomy if students become dependent on automated explanations. Tegmark (2017) Argues that despite advances in artificial intelligence, machines still lack the human attributes necessary for deep understanding, empathy, and contextual reasoning. This limitation is echoed by Ifenthaler et al. (2024), Who found that students often overestimate the accuracy of AI generated responses. Khosravi et al. (2022) suggested that AI can support autonomy when used as a scaffold rather than a substitute for human judgement. Tools that prompt reflection or offer multiple perspectives can enhance metacognitive engagement. Conversely, tools that

provide ready made answers may reduce opportunities for productive struggle, which is a key complement of cognitive development.

➤ *Gaps in the Literature*

Despite a rapidly growing body of research on AI in higher education, several important gaps remain, particularly in relation to developing country context. The following are some gaps within the literature studied:

- *Geographical Gap- Caribbean and Guyana Underrepresented*

Much of the existing research on AI and self-directed learning is situated in North America, Europe and parts of Asia. Hence, empirical studies from the Caribbean, specifically Guyana is limited. This limits the understanding of how infrastructural constraints and socio-economic realities shapes student's engagement with AI.

- *Contextual Gap*

Most of the literature focuses on STEM. Computer sc or large general education courses. There is limited work examining AI use in social sciences, community development or youth work programmes, where learning outcomes emphasis critical reflection, relational practice and community engagement.

- *Pedagogical Gap- Early-Stage of Self Directed Learners*

Many studies assume that students already possess a bassline of self-directed learning skills and digital literacy. There are few investigate contexts where students are only beginning to encounter self-directed learning where expectations at the tertiary level, as is the case in Guyana.

III. THEORETICAL FRAMEWORK

This study is grounded in Constructivist Learning Theory, which provides a robust foundation for understanding how students in BYD programme engage with artificial intelligence tools as part of their self-directed learning processes. Constructivism emphasises that learners actively construct knowledge through experience, reflection and interaction with their environment (Piaget, 1972; Vygotsky, 1978).

Constructivist theory posits that learning is not a passive process but an active one in which individuals interpret new information through the lens of prior knowledge, cultural context and personal experience (Brau,2020). In higher education, this means that students must engage meaningfully with content, question assumptions, and integrate new ideas into their existing cognitive framework. Constructivist believes that AI becomes part of the learner's environment, offering explanation and feedback that student must interpret, evaluate and integrate (Jonassen & Kim, 2018). The learner's role remains central. AI does not construct knowledge for them but provides resources that can facilitate or complicate their meaning-making.

However, constructivism also warns that if learners rely too heavily on external tools without engaging in reflection on critical evaluation, the depth and quality of learning may be compromised (Schunk, 2020).

IV. METHODOLOGY

This study employed a qualitative research design to explore students' perspectives on artificial intelligence and self-directed learning among students enrolled in the Bachelor of Youth and Community Development Programme at the University of Guyana. A qualitative approach was chosen because it allows for rich, in-depth exploration of student's perceptions, meaning-making processes and lived experiences.

➤ *Research Design*

The study was situated within an interpretivist paradigm, which assumes that reality is socially constructed and that individuals interpret experiences based on their cultural, social and educational contexts. (Schwandt, 2015). This paradigm aligns with constructivism, which views learners as active agents who build understanding through reflection and engagement.

A qualitative descriptive design was adopted to capture students' authentic voices and provide a detail account of how AI influences their self-directed learning behaviour. Qualitative description is appropriate when the goal is to understand a phenomenon from the perspective of those experiencing it, without imposing heavy theoretical abstraction. (Merriam & Tisdell, 2016).

➤ *Sampling*

A purposive sampling strategy was used to select participants who could provide rich, relevant insights into the research questions. Purposive sampling is widely used in qualitative research to identify information on rich cases that illuminate the phenomenon under study. (Palinkas et al., 2015; Campbell et al., 2020).

Twelve students were interviewed for this study. Given the small number of students enrolled in a specific year, I decided to include year one to three to allow for a larger sample. Using the students across the three years gave a better perspective for richer data. The participants were selected using the following criteria:

- Be enrolled in the Bachelor of Youth and Community Development Programme
- Have used at least one AI tool (e.g. ChatGPT, Grammarly)
- Be willing to participate in an online interview

➤ *Data Collection*

Data was collected through semi-structured interviews, which allow researchers to explore participants' experiences while maintaining flexibility to probe emerging ideas. (DeJonckere & Vaughn, 2019). This method aligns with constructivist principles by enabling participants to articulate their interpretations and construct meaning during the interview process. Interviews were conducted via zoom

platform and scheduled for approximately 30 mins, though actual durations varied due to contextual challenges such as power outages and internet connectivity, an important reality in Guyana. With participants' consent the data collected through the interviews was recorded and saved in digital audio file format for transcribing verbatim and stored on the university database in keeping with research data protection guidelines. The interview guide explored perceptions of artificial intelligence, how artificial intelligence supports or challenges self-directed learning, comparison between artificial intelligence supported and traditional learning and ethical considerations. This structure ensured alignment with the research questions while allowing participants to introduce new insights.

V. DATA ANALYSIS

Data was analysed using reflexive thematic analysis, following Braun and Clarke's (2006) six phase approach and later refinements (Byrne, 2021). This method was chosen because it supports the identification of patterns in participants' meaning-making processes and aligns with the interpretivist and constructivist foundations of the study.

The analysis involved:

- Familiarization-reading transcripts multiple times
- Initial coding-generating descriptive and interpretive codes
- Categorization-grouping related codes
- Theme development-synthesising categories into overarching themes
- Review and refinement-ensuring coherence and distinctiveness
- Finalization-defining and naming themes

During the study reflexivity was maintained throughout the process, with the researcher engaging in ongoing self-reflection to minimise bias.

➤ *Ethical Considerations*

Ethical approval was obtained from the Dean of the Faculty of Education and Humanities. Ethical procedures followed established guidelines for qualitative research (Orb et al., 2001; Tracy, 2010).

➤ *Informed Consent*

Participants received an information sheet outlining the study's purpose, procedures, risks and benefits. Participation was voluntary.

➤ *Confidentiality and Anonymity*

Pseudonyms were assigned to all participants, and no identifying information appears in the findings.

➤ *Data Protection*

Audio recordings and transcripts were stored securely and accessible only to the researcher.

➤ *Power Dynamics*

Given the researcher role as a lecturer, participants were reassured that their responses would not affect their academic standing.

➤ *Contextual Realities*

Challenges such as power outages and connectivity issues were managed with flexibility and sensitivity.

VI. FINDINGS

The findings of this study are presented through four major themes that emerged from the reflexive thematic analysis of twelve semi-structured interviews. These themes reflect how students in the Youth and Community Development programme construct meaning around their use of artificial intelligence in self-directed learning. Consistent with the constructivist learning theory, the findings highlight how students interpret and integrate AI tools into their learning processes based on their prior experiences, cultural context and academic expectations.

➤ *Students' Perceptions of Artificial Intelligence*

Students generally perceived artificial intelligence as a supportive and accessible tool; that helps them navigate academic tasks. Many described AI as a “guide”, assistant or starting point that provides clarity when they encounter difficult concepts. This reflects constructivist principles; students actively draw on AI as a resource to scaffold their understanding. Further, several participants noted that AI made learning “easier”, “faster” or less stressful, especially when dealing with complex readings or unfamiliar terminology. One participant explained:

- *“Sometimes I don't understand the readings, so I ask the AI to break it down. It helps me to get the main idea before I go back to the article” Participant C*

This illustrates how students use AI to construct preliminary understanding, which they later refine through deeper engagement. However, participants also expressed caution. Some of the participants viewed AI as “not always accurate,” “too general” or not fully aligned with our context. This awareness reflects an emerging critical stance, which is an important constructivist skill as students evaluate AI outputs rather than accepting them uncritically. In addition, the findings showed that some participants expressed ambivalence, noting that while AI is helpful, it cannot replace human interaction:

- *“It helps, but it can't teach like a lecturer. It doesn't know our examples or our communities” Participant E*

This sentiment underscores the importance of culturally relevant knowledge construction, which AI tools which trained largely on global datasets do not always provide.

➤ *Impact of Artificial Intelligence on Self-Directed Learning*

Participants described AI as having a significant impact on their self-directed learning. The findings revealed that many participants shared that AI increases their

confidence to explore topics independently, especially when they felt uncertain or lacked foundational knowledge.

- *“I use AI to tell me more about a topic I did in class, so I can have more knowledge on the topic” Participant H*

Several participants highlighted various ways AI supported their self-directed learning. Some of the positive impacts were clarifying difficult concepts, summarising long readings, offering immediate feedback and providing examples and further explanation. One participant shared: *“Before, I used to wait until class to ask questions. Now I can ask the AI anytime and get an explanation” Participant H*

This demonstrates how AI expands students' access to learning resources, enabling them to take initiative for their own learning, an essential component of self-directed learning.

However, participants also acknowledge that AI sometimes made them “too dependent” or less willing to think deeply. Several participants admitted using AI to complete tasks quickly rather than engaging in reflective learning. One participant reflected:

- *“Sometimes I feel like I'm cheating myself because I go straight to the AI instead of trying first” Participant A*

This aligns with constructivist concern that learning becomes shallow when learners bypass cognitive struggle.

Some participants also noted that AI occasionally produced incorrect or irrelevant information, requiring them to verify content through other sources. This verification process, while time-consuming, contributed to their critical thinking skills.

➤ *Traditional Vs AI Supported Learning*

The findings found that students compared AI supported learning with traditional learning methods, highlighting the strengths and weaknesses of each. The study found that participants appreciated AI for its convenience, speed, and simplicity for complex content. AI was particularly valued when students were studying alone or outside of class hours.

“In no time AI can give you the meaning of topic would have search on google for” participant E

• *Traditional Learning*

Despite the benefits of artificial intelligence, participants emphasised that traditional learning, especially discussions, lectures and group work remains essential. Many noted that AI can not replicate the depth of understanding gained through human interaction. One participant explained: *“AI gives information, but classes give understanding. When we discuss, I learn more” Participant G*. This distinction reflects the constructivist principles: social interaction and dialogue are central to meaning-making. Importantly, participants highlighted that lecturers provide contextually relevant examples rooted in Guyanese context, something that AI tools often lack.

- *Blended Learning Preference*

Most of the participants preferred a combination of AI and Traditional methods. They viewed AI as a supplementary tool rather than a replacement for lecturers or peers. One participant shared: *“I would not trade my lecturers or classes for AI, but AI can be integrated into the classes” Participant B*

- *Ethical and Societal Considerations*

The study found that the participants are unaware of the ethical issues related to using artificial intelligence. Many of the participants were unaware of the following: data privacy, academic integrity, authorship, the accuracy of AI generated content and whether AI use constitutes “cheating”. One participant admitted: *“I don’t really know what happens to the information I type in”*. Participant

- *Another participant shared “Sometimes I wonder if using AI for assignments is wrong, but nobody explained the rules” Participant A*

This uncertainty reflects a lack of institutional guidance and digital literacy training, which is an important contextual factor in Guyana’s evolving educational landscape. Participants also raised concerns about AI’s cultural relevance. Some noted that AI generated examples often reflect foreign contexts, requiring them to interpret or localised the information. Despite these concerns, participants generally felt that AI was “safe enough” and useful, though they acknowledged the need for clearer guidelines.

Across all the themes, the participants demonstrated active meaning-making as they navigate AI tools, which is consistent with the constructivist learning theory. The findings showed that the participants used AI to scaffold understanding, clarify concepts and support independent learning. However, they also recognized the limitations of AI, particularly regarding accuracy, cultural relevance and ethical uncertainty. The findings revealed a complex relationship between artificial intelligence and self-directed learning, where artificial intelligence empowers students to learn independently, yet it also introduces risks of over-reliance and superficial learning. Interestingly, the students valued artificial intelligence as a supplementary tool but emphasise the continue importance of human interaction, contextualised teaching and ethical guidance.

VII. DISCUSSION

This discussion interprets the findings through the lens of constructivist learning theory, which posits that learners actively construct knowledge through interaction, reflection and engagement with their environment (Bruner, 1996; Fosnot, 2013). The analysis also responds directly to the study’s three research questions and situates the findings within the existing literatures that demonstrates the realities of higher education within a Guyanese context.

The first research question seeks to understand how do students perceive the integration of AI technologies in their learning environment? The findings reveal that students

perceived artificial intelligence as a supportive, accessible and efficient learning tool, describing it as a “guide”. This aligns with constructivist principles which emphasise that learners draw on tools and resources to scaffold understanding (Jonassen, 1999; Fosnot, 2013). Students used AI to simplify complex readings, clarify unfamiliar concepts and generate examples, these activities that support construction of preliminary knowledge structures. Further, the findings aligns with global research indicating that students appreciate for the immediate feedback and support of independent learning (Namjoo et al., 2023; Chen et al., 2023).

However, students also recognised the limitations of AI, noting issues of accuracy. Contextual relevance and cultural fit. This critical stance reflects the constructivist idea that learners evaluate and interpret information rather than accepting it passively. (Piaget, 1972). Students’ awareness mirrors concerns in the literature about AI limitations, including cultural misalignment, and algorithmic bias (Slade & Ungerer, 2022; Ifenthaler et al., 2024).

The second question seeks to identify the key challenges and opportunities associated with using AI for self-directed learning. The findings revealed several ways the students identified how AI enhances self-directed learning. These includes clarifying difficult concepts, summarizing lengthy readings, providing examples and explanations, and increasing confidence to explore independently. These findings align with literatures that suggest that AI can personalised learning, reduce cognitive load, and support autonomy (McGraw & Bannister, 2020; Al Azawei & Al Haqmad, 2024). Constructivist theory supports this interpretation: learners benefit from tools that help them bridge gaps between prior knowledge and new information (Bruner, 1996; Fosnot, 2013). While the students outline the opportunities associated with using AI, the students also identified significant challenges which included over-reliance on AI, superficial learning, uncertainty about accuracy and ethncal ambiguity. These challenges echo concerns in the literature that AI undermine critical thinking, creativity, and deep learning (Hongke, 2020; Yildirim et al., 2023). The constructivism theory warns that when learners bypass cognitive struggle, learning becomes shallow and fragmented (Schunk, 2020).

The third research question seeks to understand how does AI influence students’ self-directed learning behaviours and outcomes. The findings showed that students self-directed learning is influenced by AI in four keyways: firstly, students used artificial intelligence to initiate learning, clarify doubts and explore topics independently. This aligns with self-directed learning literature by Barndt (2020) and Loynes et al., (2008). Secondly, students outlined that artificial intelligence provided a non-judgemental space for asking questions, reducing anxiety and encouraging experimentation. The constructivist theory supports these findings emphasising that supportive environments promote exploration and meaning making (Fosnot, 2013). Thirdly, some of the students relied on artificial intelligence to complete tasks quickly, bypassing

critical thinking. This reflects global concerns that artificial intelligence may reduce learners' motivation to engage deeply with content (Hongke, 2020). The constructivist theory stresses that meaningful learning required active engagement, not passive consumption (Piaget, 1972). Finally, students learned to cross-check artificial intelligence outputs, demonstrating emerging critical evaluation skills. This aligns with constructivist views that learners, must reflect on and evaluate information to construct robust knowledge structures (Bruner, 1996).

The study adds new insights by highlighting cultural misalignment and infrastructural challenges unique to Guyana, areas that are underrepresented in global literature. The findings, therefore, reinforces the need for contextualised artificial intelligence integration, especially in programmes focused on community development and reflective practice.

VIII. CONCLUSION

Guided by the constructivist Learning Theory, the study explores students' perspectives on artificial intelligence and self-directed learning among students enrolled in the Bachelor of Youth and Community Development Programme at the University of Guyana, the opportunities and challenges associated with its use and the ways AI shapes their learning behaviours. The findings provided valuable insight into how emerging technologies intersect with the realities of higher education in a developing country context.

The study revealed that students perceived AI as a supportive accessible tool that enhances their ability to understand complex concepts, summarise information and engage in independent learning. These perceptions align with constructivist principles, which emphasises that learners actively construct meaning through interaction with tools and resources. Artificial intelligence served as a scaffold that help students bridge gaps in foundational knowledge, particularly as they transition from teacher-centred secondary schooling to more autonomous university learning environments. At the same time, the findings highlighted important challenges. Students expressed concerns about the accuracy, cultural relevance and ethical implications of AI generated content. Many acknowledged the risk of over-reliance on AI, noting that it sometimes reduced motivation to think critically or engage deeply with academic material. These concerns echo the constructivist warnings that meaningful learning requires active cognitive engagement rather than passive consumption of information.

The study also found that AI significantly influences students' behaviour in self-directed learning. It increases their autonomy and confidence, enabling them to explore topics independently and seek clarification outside of class hours. However, it also introduced new responsibilities, such as verifying AI output and navigating ethical uncertainties. Student's reflections demonstrated emerging metacognitive awareness, as they learned to evaluate AI generated information and integrated it into their learning processes.

Importantly, the findings underscore that AI cannot replace human interaction, contextualised teaching or culturally grounded examples. Students consistently emphasised the value of classroom discussions, lecturer guidance and peer collaboration, these elements are central to the constructivist learning theory. In the Guyanese context, where digital infrastructure and cultural relevance remain significant considerations, human support remains essential for ensuring that AI enhances rather than diminishes the quality of learning. Therefore, the study concludes that artificial intelligence may be impressive, but it still lacks genuine creativity, ethical reasoning, emotional intelligence, and the ability to work or lead and negotiate with others. By training students in such skills, we ensure they do what AI cannot do. Moreover, artificial intelligence is here to stay, however, it is important that we ensure that students can effectively and ethically use artificial intelligence as well as critically evaluate its output. Findings call for intentional pedagogical strategies, clearer institutional guidelines and targeted digital literacy initiatives to help students use AI responsibly and effectively.

RECOMMENDATIONS

Based on the findings of this study, several recommendations are proposed for educators, policymakers and institutions seeking to integrate artificial intelligence into higher education in Guyana. These recommendations are aimed at strengthening student's self-directed learning, promote ethical and responsible use of artificial intelligence and ensure support rather than replacing meaningful human interaction.

- Integrate AI as a Scaffold, not a substitute- Lecturers should incorporate AI tools as supplementary support that help students build foundational understanding while requiring them to engage critical thinking and reflection.
- Teach students how to critically evaluate AI outputs- Given students concern about accuracy, educators should explicitly teach strategies for; verifying AI generated information, cross-checking sources and identifying cultural inappropriate or inaccurate content.
- Maintain Strong Human Interaction- Educators should preserve opportunities for dialogue, use AI to enhance, not diminish interactions and use contextualised examples.
- Provide training fir students and staff to build digital literacy skills such as hands on demonstration, ethical considerations, critical evaluation skills.
- Policy makers should expand broadband access to hinterland communities, support device accessibility programmes.

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