International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

A Conceptualized Framework of Ethical and Responsible Use of Artificial Intelligence Tools in Higher Education Ecosystem

Faith Kabanda[1], Sibusisiwe Dube[2]
[1,2] National University of Science and Technology, Bulawayo, Zimbabwe

ABSTRACT: This study presents results of a systematic literature review (SLR) of the responsible use of artificial intelligence (AI) tools in higher education, identify patterns of ethical and irresponsible use, and propose a conceptual framework for predicting ethical AI adoption. Following PRISMA guidelines, was conducted on 60 peer-reviewed studies published between 2022 and 2026, sourced from Google Scholar. Studies were mapped against four research questions addressing AI tools used, their applications, reported unethical practices, and predictive modelling approaches. Results reveal that general AI, generative AI tools, and large language models dominate higher education contexts, primarily deployed for personalized learning, academic work, and teaching. Irresponsible practices were documented in one-third of studies, including academic integrity breaches (13.33%), algorithmic bias, and privacy violations. Critically, no existing study developed a real-time predictive model capable of monitoring ethical AI use, despite four studies demonstrating predictive modelling capabilities for other purposes. This study addresses a significant gap by proposing a novel conceptual framework that integrates AI tool deployment, user behaviour, governance measures, and predictive analytics to forecast ethical outcomes. The framework provides higher education institutions with a pathway toward data-informed, proactive governance of AI technologies.

KEYWORDS: Artificial intelligence, Ethical and Responsible AI, Ecosystem, Higher education, Systematic literature review.

INTRODUCTION

Artificial Intelligence (AI) is fundamentally transforming higher education by enhancing teaching, learning, assessment, and administrative processes (Crompton & Burke, 2023). In contemporary educational contexts, AI refers to computer programs that learn from large datasets to perform tasks such as automated grading, personalized content recommendation, essay generation, grammar checking, and conversational tutoring through platforms including ChatGPT, Grammarly, Quillbot, and Gemini (Rahiman & Kodikal, 2024). Melnyk and Pypenko (2025) demonstrate that AI can strengthen educational ecosystems by connecting students, faculty, and administrative units into unified structures, suggesting that embracing this technology—which is unequivocally here to stay—can unlock substantial benefits when deployed ethically and responsibly.

The rapid proliferation of AI tools has, however, outpaced the development of institutional policies and governance frameworks. Sova et al. (2024) demonstrate that student awareness, perceived usefulness, and access significantly influence adoption patterns, suggesting that technical progress delivers value only when students and educators can effectively integrate new tools into their everyday academic routines. Erdmann and Toro-Dupouy (2025) emphasize that institutional readiness and organisational complexity determine the success of AI initiatives, where responsible AI entails designing and using systems in ways that safeguard fairness, privacy, transparency, and accountability at every stage.

Despite growing awareness of ethical dimensions, significant challenges persist. General codes of conduct raise awareness but rarely address day-to-day dilemmas, such as when to cite machine-generated text or how long student data may be retained (Rahiman and Kodikal, 2024). Institution-level guidelines often articulate ethical values yet fail to specify which units bear responsibility for auditing practice or which indicators signal emerging misuse, creating uneven application across faculties (Erdmann and Toro-Dupouy, 2025). This gap between ethical principles and everyday practice leaves higher education institutions vulnerable to academic integrity breaches, privacy violations, and algorithmic bias.

Existing models addressing AI in education remain fragmented, with limited effort to integrate structural, institutional, and behavioural factors into unified predictive frameworks. Student-focused studies frequently examine single disciplines, leaving adoption patterns across broader programmes understudied (Han et al., 2025). Consequently, insights gained in one context cannot be safely generalised across entire institutions, undermining attempts to establish common standards (Sova et al., 2024).

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

Above all, limited studies employ data science approaches to develop predictive models specifically targeting ethical and responsible AI use (Rahiman and Kodikal, 2024). This constrains the capacity to forecast where ethical problems will emerge or how severe they may become, forcing institutions to rely on reactive, trial-and-error approaches (Slimi and Carballido, 2023). Most importantly, the existing SLRs have not presented a conceptual framework for guiding the ethical and responsible usage of AI tools in higher education (Dube et al., 2026). For example, there exist SLRs focusing only on privacy concerns (Dube et al., 2026) while others concentrate on personalized learning approaches (Dube, et al., 2026) The present study addresses this gap by systematically reviewing existing literature and proposing a conceptual framework for predicting ethical and responsible AI use patterns in higher education. This SLR answers the following research questions:

1. Which AI tools have been used in higher education contexts?
2. How are these AI tools deployed across teaching, learning, research, and administrative processes?
3. What forms of irresponsible or unethical AI use have been documented?

METHODOLOGY

This systematic literature review was conducted following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Ajayi, 2023). PRISMA was selected because its step-by-step protocol enhances methodological transparency and facilitates replication or audit of search and selection decisions by other scholars (Taherdoost, 2022). Each stage—from study identification to data extraction and synthesis—was meticulously documented to maintain reliability and replicability.
The following search string was developed to capture relevant studies within the specified temporal and thematic scope:

("artificial intelligence" OR "AI" OR "machine learning" OR "deep learning" OR "generative AI" OR "chatbot" OR "adaptive learning" OR "automated grading") AND ("higher education" OR "university" OR "universities" OR "college" OR "tertiary education") AND ("ethical use" OR "responsible use") AND ("misuse" OR "irresponsible use") AND ("model") AND ("predict" OR "forecast").

The search strategy incorporated criteria based on keyword frequency, author reputation, citation count, and publication source to ensure relevance and quality. Search filters prioritized the prominence of keywords in titles, abstracts, or main text, ranking studies by frequency of keyword usage. The study included journal articles published between 2022 and March 2026 and excluded any publications outside this scope. The initial database search yielded 300 records from Google Scholar. Following removal of duplicates (n=2) and application of the date filter restricting publications to 2022–present (removing 24 records), 274 records proceeded to title and abstract screening. Full-text eligibility review, together with title-and-abstract assessment, excluded 214 studies for reasons including non-English language, absence of higher education context, or lack of predictive or analytical components. The final sample comprised 60 articles meeting all inclusion criteria and forming the evidence base for synthesis. The 60 extracted articles were synthesized thematically to address the four research questions and to identify patterns, gaps, and opportunities for future research.

RESULTS

This section presents findings of the SLR regarding the AI tools commonly used in academia, the applications of those AI tools, and the unethical and irresponsible usage of the AI tools.

Mapping of Included Studies

Table 1 presents a summary mapping of the 60 included studies against the four research questions, indicating the distribution of contributions across thematic areas.

Table 1. Summary Mapping of Included Studies (n – 60)

Research Question	Studies Addressing the Question	Percentage
AI Tools used	60	100%
Application of AI Tools	60	100%
Unesthical and Irresponsible practices	53	88.33%

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

AI Tools Used in Higher Education

Analysis of the 60 studies revealed diverse AI applications, with generic references to "AI" present in 41% of articles, Generative AI Tools in 26.00%, Large Language Models in 11%, and specialised systems including AI assessment platforms, multi-agent environments, and text-generation detectors each appearing in 22% of the corpus, which are depicted in Table 2 and Figure 1.

Table 2. AI Tools used in Higher Education

AI Tool	Count	Source
AI (general)	26	(Abdennour, Kemouss and Khaldi, 2025; Alawneh, 2025; AliKhan, 2024; Ariza and Mountford, 2025; Deckker and Sumanasekara, 2025; Fengrui, 2025; Harwood, 2025; Huang, 2025; Istrate and Velea, 2024; Kapoor, Sankhla and Syed, 2026; Khan, 2025; Mistry, 2024; Molek, 2023; Nartgün and Kennedy, 2024; Niazai and Monib, 2025; Ortiz et al., 2025; Rothera and Macdonald, 2025; Series, 2024; Shukla, 2024; Singleton, 2025; Venkatesh and Preethi, 2025; Yazdandoust, 2025; Mishra and Varshney, 2024; Kapoor, Sankhla and Syed, 2026; Bulut et al., 2024; AliKhan, 2024)
Generative AI	16	(Akb ar, 2025; Baker, 2025; Balthazaar, 2025; Echeverria-Caicedo et al., 2026; Eze, 2024; Fitas, Ghosh and Maity, 2025; Freeman, 2025; Frieary, 2025; Hagsér and Rademacher, 2025; Khojah et al., 2025; Lamrabet et al., 2026; Miller, 2025; Noviandy et al., 2024; Sarkam et al., 2025; Vorobyeva et al., 2025; Quang Sang et al., 2025)
Large Language Models	7	(Azoulay, Hirst and Reches, 2025; Ganai and Naikoo, 2025; Kaushik et al., 2025; Kronqvist, 2025; Njee, 2025; Prather et al., 2023; Vyortkina, 2023)
Other specialized Systems	14	(Wadhwani and Mohadeb, 2025; Vorobyeva et al., 2025; Tariq, 2026; Singh and Sinha, 2025; Siddiqui et al., 2025; Prajapati, 2024; Paullet et al., 2025; Omirali, Kozhakhmet and Zhumaliyeva, 2025; Ogwueleka, 2025; Nwozor, 2025; Masters dt al., 2025; Juárez et al., 2026; Jokhan et al., 2022; Abdelaal, 2026)

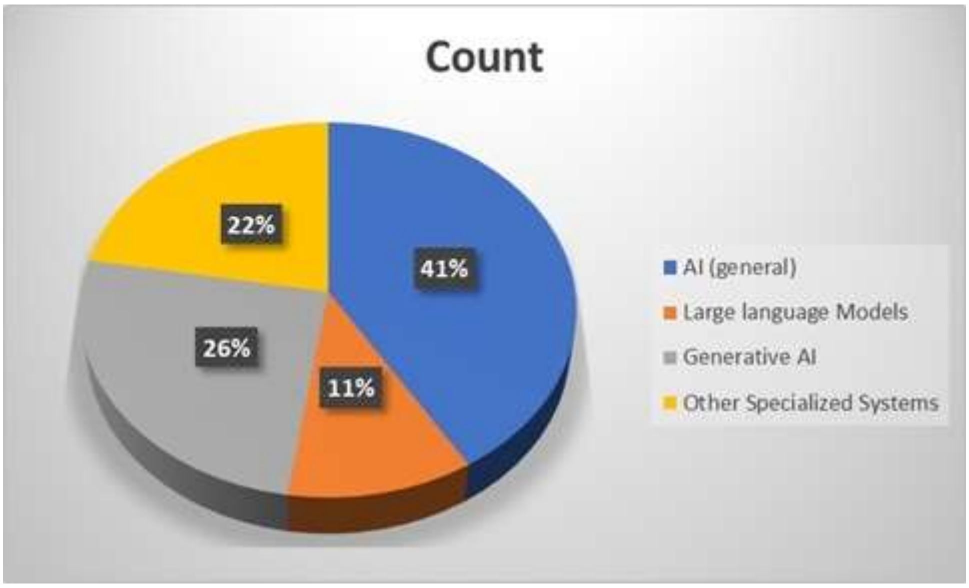

Figure 1: Distribution of AI tools used in higher education

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

General AI applications were the most frequently examined tools. Abdennour, Kemouss, and Khaldi (2025) employed AI to redesign non-technical curricula, introducing data-driven topic sequencing and automated mapping to graduate attributes. Ariza and Mountford (2025) powered decision dashboards for educational leaders with predictive AI analytics signalling enrolment trends and resource bottlenecks. Deckker and Sumanasekara (2025) described AI support for student services, noting improved turnaround in advising queries. FENGRUI (2025) applied optimisation algorithms to classroom scheduling, reducing instructor clashes and room idle time. Harwood (2025), Huang (2025), Istrate and Velea (2024), and Khan (2025) reported adaptive instruction and streamlined administration through intelligent content recommendations and real-time attendance tracking.

Generative AI tools attracted substantial scholarly attention. Balthazaar (2025), Khojah et al. (2025), Miller (2025), and Noviandy et al. (2024) demonstrated that these platforms accelerated lesson planning and multimedia development by converting simple prompts into slide decks, infographics, and video storyboards. Akbar (2025), Baker (2025), Echeverria-Caicedo et al. (2026), and Fitas, Ghosh, and Maity (2025) described ChatGPT's support for essay drafting and formative feedback, highlighting coherence, citation quality, and linguistic accuracy. Frieary (2025) and Sarkam et al. (2025) designed critical-thinking tasks requiring students to refine or fact-check generated content. Vorobyeva et al. (2025) combined generative AI with machine-learning analytics to personalise readings according to individual comprehension levels. Eze (2024), Freeman (2025), and Hagsér and Rademacher (2025) integrated Microsoft Copilot into collaborative writing studios, tracking revision history. Lamrabet et al. (2026) compared ChatGPT with DeepSeek and Grok, identifying domain-specific gains in STEM problem explanations.

Large Language Models featured prominently across multiple applications. Azoulay, Hirst, and Reches (2025) and Prather et al. (2023) employed LLMs for step-by-step coding tutorials, adapting to learner errors. Ganai and Naikoo (2025) scaffolded programming exercises with automatic hint generation. Njee (2025) supported academic writing by suggesting thesis-driven outlines. Kaushik et al. (2025) contrasted ChatGPT and Bard for concise responses in management courses. Vyortkina (2023) evaluated model performance across varied linguistic contexts to inform localisation strategies.

Specialised AI systems appeared less frequently but addressed distinct challenges. Masters et al. (2025) developed an AI assessment platform for health-professions education, tracking competency milestones, and issuing remediation pathways. Mishra and Varshney (2024) implemented chatbots answering routine student inquiries within learning-management systems. AliKhan (2024) designed a multimodal information-assessment system checking source credibility by fusing text, citation, and image signals. Paullet et al. (2025) assessed GPTZero for text detection to support academic integrity workflows. Wadhwani and Mohadeb (2025) catalogued institutional suites featuring intelligent tutoring, predictive analytics, plagiarism detection, and automated grading within unified dashboards.

The specialized systems, including natural language processing, were also identified, which according to Singh and Sinha (2025), and Ogwueleka (2025) and Jokhan et al. (2022) predicted final grades with Random Forest models, achieving over 80% accuracy. Tariq (2026) fed predictive analytics into curriculum updates by highlighting skill gaps relative to industry demand. Omirali, Kozhakhmet, and Zhumaliyeva (2025) synchronised tutoring agents within multi-agent systems, assigning tasks to the most effective bot. Juárez et al. (2026) presented Nested Learning, fusing generative AI with neuroimaging data for adaptive scaffolding in medical anatomy. Vorobyeva et al. (2025) adjusted digital resources in real time through combined pipelines, monitoring reading speed and quiz scores. Abdelaal (2026) paired AHP and TOPSIS with AI data to refine instructional strategies in engineering design studios. Nwozor (2025) explored text generators and code assistants, accelerating student software prototyping through auto-completion and debugging suggestions.

How AI Tools Were Used

The 60 studies recorded three distinct applications of AI in higher education. Personalized learning was cited most frequently (47%), followed by research (32%), and lastly teaching (21%). The usage practice included AI detection, automation, task completion, learning enhancement, decision making, information generation, adaptive or ethical support, and specialised assessment.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

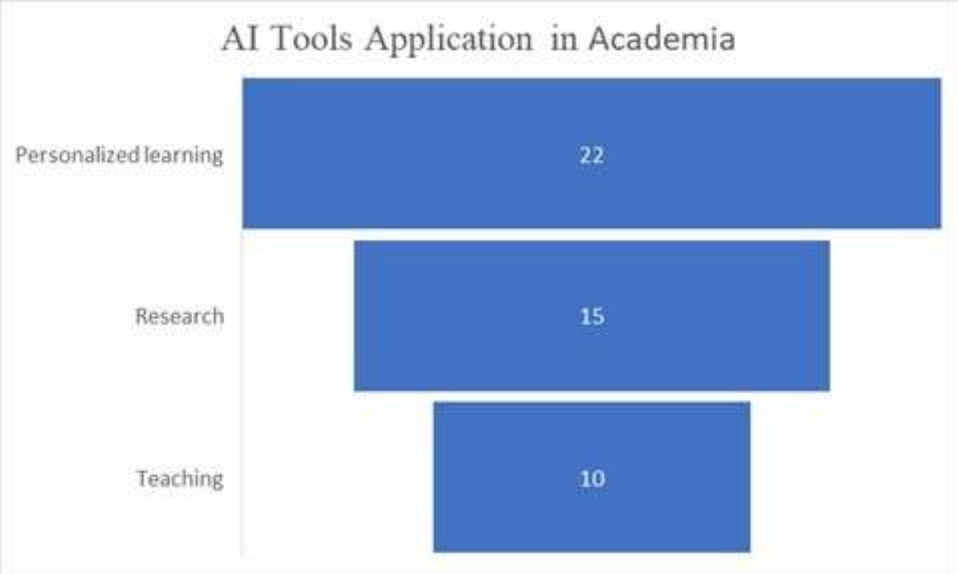

Figure 2: Application of AI Tools in Higher Education

Figure 2 shows that personalized learning dominates the rest of AI Tools applications. For example, a study by Tariq (2026) and Vorobyeva et al. (2025) fed learner analytics into adaptive engines, adjusting resources in real time. Mistry (2024), Khan (2025), and Niazai and Monib (2025) tailored pacing and content to individual preferences. Wadhwani and Mohadeb (2025) combined personalisation with institutional analytics to free instructors from routine monitoring. Omirali, Kozhakhmet, and Zhumaliyeva (2025) coordinated multiple intelligent agents to maintain learning path alignment with program outcomes. Abdennour, Kemouss, and Khaldi (2025) and Vyortkina (2023) added intelligent tutoring functions, providing automated hints and revision advice previously requiring human mentors.

Application of AI tools to research was the second-largest category. Azoulay, Hirst, and Reches (2025), Akbar (2025), Baker (2025), and Echeverria-Caicedo et al. (2026) relied on large language models to draft, revise, or critique essays. Eze (2024) and Freeman (2025) demonstrated that code assistants improve programming assignments. Balthazaar (2025) blended essay support with intelligent tutoring. Njee (2025) monitored assignment progress through generated scaffolds. Mishra and Varshney (2024) embedded chatbots in learning-management systems to answer citation or formatting questions.

Teaching tasks appeared in 10.00% of articles. Huang (2025), Rothera and Macdonald (2025), Siddiqui et al. (2025), and Prather et al. (2023) described AI modules suggesting lecture examples, grading quizzes, or simulating laboratory exercises. FENGRUI (2025) experimented with model-driven teaching strategies. Venkatesh and Preethi (2025) added automated assessment to large survey courses.

Three studies focused on AI detection: Sarkam et al. (2025), Paullet et al. (2025), and Ogwueleka (2025) employed neural networks or specialised classifiers to distinguish human writing from generated text. Automation of repetitive work, with Singh and Sinha (2025) building workflow bots, Kaushik et al. (2025) scripting boilerplate for personalised handouts, and Bulut et al. (2024) automating large-scale forum scoring.

Task-completion systems were also identified in the literature included in this study. Nartgün and Kennedy (2024) and Kronqvist (2025), prompting language models to complete essays and laboratory write-ups. Juárez et al. (2026) guided students through stepwise problem solving in medical imaging. Studies enhancing learning rather than personalising per student with Nwozor (2025) streamlining code prototyping, Shukla (2024) shortening feedback cycles, and Fitas, Ghosh, and Maity (2025) boosting teacher productivity.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

Teaching constituted decision support, where Ariza and Mountford (2025) and Harwood (2025) mined enrolment or workload data to steer policy and staffing. The same proportion concentrated on information generation, seen in Ganai and Naikoo (2025) and Noviandy et al. (2024), producing near-human text, imagery, or code from minimal prompts. Quang Sang et al. (2025) tested adaptive innovation modules; Masters et al. (2025) created an AI platform for health-professions assessment; Hagsér and Rademacher (2025) offered brainstorming and writing feedback; Jokhan et al. (2022) developed a grade-prediction classifier; Friery (2025) redesigned community-college curricula; Ortiz et al. (2025) managed digital transformation plans; Khojah et al. (2025) embedded generative-AI competencies for industry alignment; Singleton (2025) upgraded learning-management dashboards; Kapoor, Sankhla and Syed (2026) mirrored student ethical dispositions in virtual personas; AliKhan (2024) combined explainable AI with credibility checks; Lamrabet et al. (2026) piloted teacher training scenarios; Abdelaal (2026) integrated AI literacy via Python and TensorFlow workshops; Series (2024) together with Istrate and Velea (2024) blended AI into broader teaching and learning reforms.

Irresponsible or Unethical Practices Reported

The literature included in this study reports diverse unethical and irresponsible practices associated with educational AI, for example, Njee (2025) warned that large language models encouraged contract cheating. Rothera and Macdonald (2025) observed the use of AI tools for ghost-writing in seminar submissions. Hagsér and Rademacher (2025) points to uncredited use of AI feedback tools. Nwozor (2025) identifies code-assistant misuse. Baker (2025) and Eze (2024) and Sarkam et al. (2025) report the use of AI tools for plagiarism. It has been observed in literature that unscrupulous students take advantage of algorithmic biases in AI tools to promote social exclusion among diverse learners (Mountford, 2025, Mistry, 2024; Singleton 2025, Omirali, Kozhakhmet, & Zhumaliyeva, 2025; Mishra & Varshney 2024).

Articles included in this study further highlighted that much of the work submitted by students was characterized by inaccuracies leading to substandard academic work. For example, Nartgün and Kennedy (2024) found that students auto-generated essays were characterized by factual error., a concern that students were now abusing AI tools to do their work Similarly, Kronqvist (2025) indicated AI academic work that is generated by irresponsible students has many citation hallucinations that are not corrected. Furthermore, Paullet et al. (2025) identified false positives when detecting AI-written text while Jokhan et al. (2022) warned of grade predictions mis-ranking high achievers and Vyortkina (2023) questioned reliability across languages. In addition, Venkatesh and Preethi (2025), Masters et al. (2025), Kapoor, Sankhla and Syed (2026), and Wadhwani and Mohadeb (2025) argue that advice and automated feedback from chatbots could mislead students and convince them to pursue unethical learning practices.

Another concern was raised by Balthazaar (2025) and PRAJAPATI (2024) who report that students get unauthorized access to sensitive data collected and stored by AI models, which they abuse for their benefit. For example, Siddiqui et al. (2025) traced learner analytics dashboards and found a linkage of personal identifiers, which could be easily predicted. These privacy concerns are confirmed by Deckker and Sumanasekara (2025) and Vorobyeva et al. (2025) who highlighted issues of unconsented data retention while Juárez et al. (2026) point to cognitive sovereignty in neuro-adaptive platforms. Regarding teaching, Istrate and Velea (2024) and Series (2024) found that faculty lack skills to audit AI recommendations, creating dependence on opaque systems. Erosion of critical thinking and creativity was noted by Abdennour, Kemouss, and Khaldi (2025) and Akbar (2025), who observed students accepting generated answers without verification. Adding to this, the study also notes that several students are irresponsible and use AI tools to spread inaccurate information. spread (AliKhan, 2024; Prather et al., 2023),

It can be concluded that there are fears about limited responsible integration of AI tools (Kaushik et al., 2025), concerns about general safety (Freeman, 2025), and the use of AI tools for non-innovations (Ortiz et al., 2025), promoting unequal access (Fitas, Ghosh and Maity, 2025), over-reliance on language models stalling skills development (Azoulay, Hirst and Reches, 2025), and absence of clear standards (Molek, 2023).

Predictive models for identifying Unethical and Irresponsible use of AI Tools

A limited number of papers contained elements that could serve as stepping-stones yet fell short of dedicated ethics trackers. Jokhan et al. (2022) created a Random Forest model predicting early course grades, maintaining focus on academic performance rather than integrity risks. Quang Sang et al. (2025) developed a hybrid SEM and ANN model forecasting GPT adoption across three countries, measuring variables centred on willingness and motivation rather than responsible use. Sarkam et al. (2025) came closest by training an ANN to estimate plagiarism and over-reliance probabilities, yet outputs were static risk scores rather than live monitoring systems

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

capable of flagging emerging misuse. Akbar (2025) built a web tool helping instructors design AI-resistant assessments, offering prevention rather than ongoing surveillance. On a different note. Sarkam et al. (2025) deployed a neural network to detect copied passages while Hagsér and Rademacher (2025) developed a tool to flag uncredited use of AI feedback tools These studies demonstrate that the field possesses technical capacity for predictive analytics. The critical gap lies in redirecting these capabilities toward models tracking plagiarism probability, bias likelihood, or privacy exposure in real time.

Conceptual framework for predicting ethical and responsible AI use

Addressing the identified gaps, this study proposes a conceptual framework linking five constructs drawn from the evidence base: AI-Tool Deployment, User Behaviour, Governance Measures, Predictive Analytics, and Ethical Outcomes. The proposed framework operates through four sequential mechanisms.

1. *Data Collection*: Institutions log detailed usage data from AI platforms, capturing metrics including chat length, citation patterns, code-assistant calls, revision histories, and help-seeking behaviours.
2. *Real-Time Analytics*. Predictive analytics modules process these data streams continuously, assigning risk scores for potential plagiarism, algorithmic bias, privacy breaches, or over-reliance.
3. *Triggered Governance*: Elevated risk scores activate governance responses such as targeted training prompts, assessment redesign recommendations, temporary access limitations, or automated feedback directing users toward ethical practices.
4. *Continuous Improvement*: Ongoing data flow refines both the predictive model and institutional policies, creating a learning cycle that progressively strengthens ethical outcomes.

This conceptual framework integrates multiple theoretical perspectives. From learning sciences, it draws on self-regulated learning theory, positing that real-time feedback on AI use can enhance students' capacity to monitor and regulate their own behaviour. Organisational theory incorporates concepts of governance and accountability, recognising that institutional structures shape individual action. From ethics, it reflects principles of transparency, fairness, and beneficence, ensuring that predictive capabilities serve human flourishing rather than mere surveillance.

The framework advances theory by linking learning-science constructs with formal ethics models, explaining why particular AI features encourage desirable behaviours or lead to misuse. Methodologically, it demonstrates how continuous usage data, survey responses, and interview insights can be integrated within unified research designs. Practically, it provides institutions with a prototype for data-informed, proactive AI governance, enabling early intervention rather than post-hoc policing.

CONCLUSION

This systematic literature review of 60 studies examining AI use in higher education reveals widespread adoption across teaching, learning, research, and administration, with general AI applications and generative tools dominating practice. Reports of academic-integrity breaches, algorithmic bias, and privacy risks appear in one-third of the literature. Methodologically, most authors rely on descriptive reviews or single-site surveys, with only four studies attempting model or tool development. Critically, none provides a real-time predictive system capable of tracing misuse or guiding timely intervention.

The conceptual framework presented responds to this deficit by linking AI deployment data to governance levers and predictive analytics, offering a pathway to monitor ethical risk as it emerges. Implementing and validating this framework can advance theory, strengthen research design, and supply institutions with practical dashboards supporting responsible, transparent, and learner-centred AI integration.

Future research should focus on developing and validating predictive models incorporating the framework's constructs, testing these models across diverse institutional contexts, and refining governance responses based on empirical evidence of effectiveness. Such work will move higher education toward routine, data-informed stewardship of AI technologies, ensuring that the undoubted benefits of artificial intelligence are realised without compromising the ethical foundations of academic practice.

Summarize the principal contributions of the study.

Avoid adding new data or claims not supported by the findings.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

REFERENCES

1. Ajayi, V.O., 2023. A review on primary sources of data and secondary sources of data. Available SSRN 5378785.
2. Al Ka'bi, A., 2023. Proposed artificial intelligence algorithm and deep learning techniques for the development of higher education. Int. J. Intel. Netw. 4, 68–73.
3. Aler Tubella, A., Mora-Cantallops, M., Nieves, J.C., 2023. How to teach responsible AI in Higher Education: challenges and opportunities. Ethics Inf. Technol. 26, 3. https://doi.org/10.1007/s10676-023-09733-7
4. Crompton, H., Burke, D., 2023. Artificial intelligence in higher education: the state of the field. Int. J. Educ. Technol. High. Educ. 20, 22. https://doi.org/10.1186/s41239-023-00392-8
5. Diallo, R., Edalo, C., Awe, O.O., 2024. Practical Statistical Learning and Data Science Methods: Case Studies from LISA 2020 Global Network, USA. Springer Nature.
6. Dube, S, Madzore, A, Dube, S.P, Mpande, B (2026). Enhancing Personalized E-Learning Systems in Higher Education Through Artificial Intelligence: A Rapid Systematic Literature Revie, 10(2), https://doi.org/10.47772/IJRISS.2026.10200008.
7. Dube, S, Mpande, B, Chazuza, T, Siwela, T, Moyo, M Dube, S. P, (2026). A Systematic Literature Review of Data Privacy in AI-Driven Educational Platforms. , 10(26), https://doi.org/10.47772/IJRISS.2026.1026EDU0078.
8. Erdmann, A., Toro-Dupouy, L., 2025. The influence of the institutional environment on AI adoption in universities: identifying value drivers and necessary conditions. Eur. J. Innov. Manag. 28, 4365–4398. https://doi.org/10.1108/EJIM-04-2024-0407
9. Francis, N.J., Jones, S., Smith, D.P., 2025. Generative AI in higher education: Balancing innovation and integrity. Br. J. Biomed. Sci. 81, 14048.
10. Hall, P., Curtis, J., Pandey, P., 2023. Machine Learning for High-risk Applications: Approaches to Responsible AI. O'Reilly Media, Inc.
11. Han, B., Coghlan, S., Buchanan, G., McKay, D., 2025. Who is Helping Whom? Student Concerns about AI-Teacher Collaboration in Higher Education Classrooms. Proc ACM Hum-Comput Interact 9, CSCW206:1-CSCW206:32. https://doi.org/10.1145/3711104
12. Hasan, A., 2021. Ethical considerations in the use of secondary data for built environment research, in: Secondary Research Methods in the Built Environment. Routledge.
13. Ifenthaler, D., Gibson, D., Prasse, D., Shimada, A., Yamada, M., 2021. Putting learning back into learning analytics: actions for policy makers, researchers, and practitioners. Educ. Technol. Res. Dev. 69, 2131–2150. https://doi.org/10.1007/s11423-020-09909-8
14. Iranzad, R., Liu, X., 2025. A review of random forest-based feature selection methods for data science education and applications. Int. J. Data Sci. Anal. 20, 197–211. https://doi.org/10.1007/s41060-024-00509-w
15. Li, Z., Dhruv, A., Jain, V., 2024. Ethical Considerations in the Use of AI for Higher Education: A Comprehensive Guide, in: 2024 IEEE 18th International Conference on Semantic Computing (ICSC). Presented at the 2024 IEEE 18th International Conference on Semantic Computing (ICSC), pp. 218–223. https://doi.org/10.1109/ICSC59802.2024.00041
16. Melnyk, Y.B., Pypenko, I.S., 2025. Implementing of artificial intelligence in a higher educational ecosystem. Int. J. Sci. Ann. 8, 13–20. https://doi.org/10.26697/ijsa.2025.1.1
17. Michel-Villarreal, R., Vilalta-Perdomo, E., Salinas-Navarro, D.E., Thierry-Aguilera, R., Gerardou, F.S., 2023. Challenges and opportunities of generative AI for higher education as explained by ChatGPT. Educ. Sci. 13, 856.
18. Mishra, V. and Mishra, M.P., 2023. PRISMA for review of management literature–method, merits, and limitations–an academic review.
19. Mrabti, L., Alaoui, Z.B., 2024. Balancing Qualitative and Quantitative Research Methods: Insights and Applications, in: Data Collection and Analysis in Scientific Qualitative Research. IGI Global Scientific Publishing, pp. 87–118. https://doi.org/10.4018/979-8-3693-8689-7.ch004
20. Mumtaz, S., Carmichael, J., Weiss, M., Nimon-Peters, A., 2025. Ethical use of artificial intelligence based tools in higher education: are future business leaders ready? Educ. Inf. Technol. 30, 7293–7319. https://doi.org/10.1007/s10639-024-13099-8

21. Nagy, A.S., Tumiwa, J.R., Arie, F.V., Erdey, L., 2024. An exploratory study of artificial intelligence adoption in higher education. Cogent Educ. 11, 2386892. https://doi.org/10.1080/2331186X.2024.2386892
22. Pacheco-Mendoza, S., Guevara, C., Mayorga-Albán, A., Fernández-Escobar, J., 2023. Artificial intelligence in higher education: A predictive model for academic performance. Educ. Sci. 13, 990.
23. Rahiman, H.U., Kodikal, R., 2024. Revolutionizing education: Artificial intelligence empowered learning in higher education. Cogent Educ. 11, 2293431. https://doi.org/10.1080/2331186X.2023.2293431
24. Salman, H.A., Kalakech, A., Steiti, A., 2024. Random forest algorithm overview. Babylon. J. Mach. Learn. 2024, 69–79.
25. Shimaoka, A.M., Ferreira, R.C., Goldman, A., 2024. The evolution of CRISP-DM for data science: Methods, processes and frameworks. SBC Rev. Comput. Sci. 4, 28–43.
26. Slimi, Z., Carballido, B.V., 2023. Navigating the Ethical Challenges of Artificial Intelligence in Higher Education: An Analysis of Seven Global AI Ethics Policies. TEM J. 12.
27. Sova, R., Tudor, C., Tartavulea, C.V., Dieaconescu, R.I., 2024. Artificial Intelligence Tool Adoption in Higher Education: A Structural Equation Modeling Approach to Understanding Impact Factors among Economics Students. Electronics 13, 3632. https://doi.org/10.3390/electronics13183632
28. Statham, W., 2025. Facilitating Faculty Engagement with AI: Practical Insights from the Frontline of Higher Education, in: INTED2025 Proceedings. IATED, pp. 6015–6024.
29. Taherdoost, H., 2022. What are Different Research Approaches? Comprehensive Review of Qualitative, Quantitative, and Mixed Method Research, Their Applications, Types, and Limitations. J. Manag. Sci. Eng. Res. 5, 53–63. https://doi.org/10.30564/jmser.v5i1.4538
30. Towfek, S.K., Khodadadi, N., Abualigah, L., Rizk, F.H., 2024. AI in higher education: insights from student surveys and predictive analytics using PSO-guided WOA and linear regression. J. Artif. Intell. Eng. Pract. 1, 1–17.
31. Yu, J., 2021. Academic Performance Prediction Method of Online Education using Random Forest Algorithm and Artificial Intelligence Methods. Int. J. Emerg. Technol. Learn. 15, 45. https://doi.org/10.3991/ijet.v16i05.20297
32. Azoulay, R., Hirst, T. and Reches, S., 2025. Large language models in computer science classrooms: Ethical challenges and strategic solutions. Applied Sciences, 15(4), p.1793.
33. Ganai, P.A. and Naikoo, I.A., 2025. The Ethical Paradox of AI-Generated Texts: Investigating the Moral Responsibility in Generative Models.
34. Njee, L.C., 2025. Online Professors' Experience With Students Misusing Artificial Intelligence (AI) in Higher Education: An Exploratory Case Study (Doctoral dissertation, National University).
35. Prather, J., Denny, P., Leinonen, J., Becker, B.A., Albluwi, I., Craig, M., Keuning, H., Kiesler, N., Kohn, T., Luxton-Reilly, A. and MacNeil, S., 2023. The robots are here: Navigating the generative ai revolution in computing education. In Proceedings of the 2023 working group reports on innovation and technology in computer science education (pp. 108-159).
36. Vyortkina, D., 2023. AI in Education: Good, Bad, and Ugly. In ICERI2023 Proceedings (pp. 956-966). IATED.
37. Abdennour, O., Kemouss, H. and Khaldi, M., 2025. Integrating AI Education in Non-Technical Disciplines: Bridging the Gap Between Theory and Practice. In Ethics and AI Integration Into Modern Classrooms (pp. 117-146). IGI Global Scientific Publishing.
38. Ariza, E.N.W. and Mountford, M., 2025. Global Leadership and Artificial Intelligence (AI) Literacies: A Fulbright Perspective. Journal of Literacy and Technology, 26(3).
39. Deckker, D. and Sumanasekara, S., 2025. Student-centric ethical frameworks for AI-driven education: Participatory consent and data ownership in a global perspective. International Journal of Science and Research Archive, 15(3), pp.1491-1503.
40. FENGRUI, Z., 2025. Artificial Intelligence and Business Education: Transformation, Challenges, and Future Prospects. In International Conference on Fundamental and Applied Research (I-CFAR) (Vol. 2, pp. 601-608).
41. Harwood, A.E., 2025. AI in Academia: Faculty Perspectives at the Crossroads of Technology and Education (Doctoral dissertation, California State University, Los Angeles).

42. Huang, D., 2025. How teachers perceive AI in their profession and classroom: professional visions and practical problems (Doctoral dissertation, Boston University).
43. Istrate, O. and Velea, S., 2024. Guidelines for Online and Blended Learning: Design, Delivery, Assessment, Evaluation of Study Programmes Premises of Academic Curriculum Digitalisation.
44. Khan, T., 2025. AI in Education-A Primer for Educators. Available at SSRN 5528959.
45. Mistry, H.M., 2024. Need for Artificial Intelligence (AI) Tools in Educational Institutions (Doctoral dissertation, University of the Cumberlands).
46. Nartgün, Z. and Kennedy, E., 2024. Artificial Intelligence (AI) and education: Contributions opportunities and challenges. Political Economy and Management of Education, 5(2), pp.24-46.
47. Niazai, H. and Monib, W.K., 2025. AI for Personalized Learning in Medical Education. In Teaching in the Age of Medical Technology (pp. 91-122). IGI Global Scientific Publishing.
48. Ortiz, E.A., Vergara, N.C., Pabón, T.F., Gambi, G.D.N., Giambruno, C., Alfaro, M.P. and Segura, D.R., 2025. AI and education: Building the future through digital transformation.
49. Rothera, S. and Macdonald, M.A., 2025. Understanding the emerging use of artificial intelligence (AI) in social work education and practice in England.
50. Series, I.I.P., 2024. Teaching in the Artificial Intelligence Era: Empowering Educators for the Future.
51. Shukla, S., 2024. Principles governing ethical development and deployment of AI. International Journal of Engineering, Business and Management, 8(2), pp.26-46.
52. Singleton, J.L., 2025. Unlocking Student Success: Exploring the Impact of AI-Driven Tools within the LMS on Improving Student Academic Success (Doctoral dissertation).
53. Venkatesh, R. and Preethi, D.M.D., 2025. Innovations in Education: The Influence of Artificial Intelligence and Data Science on Teaching, Learning, and Assessments. In Driving Quality Education Through AI and Data Science (pp. 25-50). IGI Global Scientific Publishing.
54. Yazdandoust, Y., 2025. Public Health Students' Perceptions of AI Technology in Education and Practice.
55. Alawneh, Y.J., 2025. Graduate Students’ Perceptions at An-Najah National University Regarding the Role of Artificial Intelligence in Enhancing Interaction in E-Learning Environments.
56. Masters, K., MacNeil, H., Benjamin, J., Carver, T., Nemethy, K., Valanci-Aroesty, S., Taylor, D.C., Thoma, B. and Thesen, T., 2025. Artificial intelligence in health professions education assessment: AMEE guide no. 178. Medical Teacher, 47(9), pp.1410-1424.
57. Mishra, D.R. and Varshney, D., 2024. Comprehensive analysis of human and AI task allocation in the education sector: Defining futuristic roles and responsibilities. World Journal of Advanced Research and Reviews, 22(3), pp.10-30574.
58. Ali Khan, U., Kauttonen, J., Aunimo, L. and V Alamäki, A., 2024. A system to ensure information trustworthiness in artificial intelligence enhanced higher education.
59. Kapoor, S.K., Sankhla, K. and Syed, S., 2026. Ethical Digital Twin: A Framework for AI-Powered Moral Reasoning Simulations in Education. In AI-Powered Transformations for Ethical Education (pp. 21-54). IGI Global Scientific Publishing.
60. Siddiqui, M.T., Mansoori, M.V., Siddiqui, M.A. and Yadav, A., 2025. AI-enabled pedagogy: Advancing education through innovative teaching tools and the AITEACH model. Journal of Informatics Education and Research, 5(1), pp.2526-2539.
61. Kronqvist, S., 2025. Ethics in AI usage.
62. Balthazaar, D., 2025, July. AI-Powered Pedagogy: A Model For Innovation In Teaching And Learning. In International e-Conference Proceeding (p. 38).
63. Khojah, R., Werth, A., Broadhead, K.W., Dobrucki, L.W., Geiger, C. and Rubenstein, D.A., 2025. Integrating Generative Artificial Intelligence Tools and Competencies in Biomedical Engineering Education: R. Khojah et al. Biomedical Engineering Education, 5(2), pp.135-151.
64. Miller, T.M., 2025. Adjunct Faculty Experiences of Students Using Generative Artificial Intelligence Content in Class: A Narrative Inquiry (Doctoral dissertation, University of Phoenix).

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 09 Issue 03 March 2026
DOI: 10.47191/ijcsrr/V9-i3-37, Impact Factor: 8.048
IJCSRR @ 2026
www.ijcsrr.org

65. Noviandy, T.R., Maulana, A., Idroes, G.M., Zahriah, Z., Paristiowati, M., Emran, T.B., Ilyas, M. and Idroes, R., 2024. Embrace, don't avoid: reimagining higher education with generative artificial intelligence. Journal of Educational Management and Learning, 2(2), pp.81-90.
66. Akbar, M.S., 2025. Beyond detection: designing AI-resilient assessments with automated feedback tool to foster critical thinking. arXiv preprint arXiv:2503.23622.
67. Baker, N., 2025. Generative Artificial Intelligence: Implications and Considerations for Higher Education Practice. Education Sciences.
68. Echeverria-Caicedo, K., Vázquez-Meza, J.A., Llacsa-Puma, L.J., Gutiérrez-Izquierdo, M.A., Quirino-Rodríguez, L.G., Rengifo-Lozano, R.A., Chipana Peceros, C.N., Sabando-García, Á.R. and Moreira-Choez, J.S., 2026. Responsible practices and ethical behaviors in the use of artificial intelligence among university students. F1000Research, 15, p.16.
69. Fitas, R., Ghosh, K. and Maity, S., 2025. Leveraging AI in education: benefits, responsibilities, and trends. In AI Roles and Responsibilities in Education (pp. 129-169). Cham: Springer Nature Switzerland.
70. Frieary, A., 2025. The Integration of Artificial Intelligence Into Curriculum Design in Higher Education (Doctoral dissertation).
71. Sarkam, N.A., Mohammad, N.H., Jamil, N.I., Razi, N.F.M. and Ahmad, S., 2025, September. Analyzing the Impact of ChatGPT on Student Over-Reliance and Plagiarism using Artificial Neural Network (ANN). In 2025 6th International Conference on Artificial Intelligence and Data Sciences (AiDAS) (pp. 552-558). IEEE.
72. Vorobyeva, K.I., Belous, S., Savchenko, N.V., Smirnova, L.M., Nikitina, S.A. and Zhdanov, S.P., 2025. Personalized Learning through AI: Pedagogical Approaches and Critical Insights. Contemporary Educational Technology, 17(2).
73. Eze, C.A., 2024. The role of educators in upholding academic integrity in an ai-driven era. AI and ethics, academic integrity and the future of quality assurance in higher education.
74. Freeman, K., 2025. Perceptions of Artificial Intelligence in Higher Education (Doctoral dissertation, Seton Hall University).
75. Hagsér, E. and Rademacher, T., 2025. Generative AI Chatbots in Higher Education: ATAM-Based Analysis of Discipline-Specific Adoption Patterns for Students at the University of Borås.
76. Lamrabet, M., Fakhar, H., Echantoufi, N., El Khattabi, K. and Ajana, L., 2026. Exploring the Potential of Generative AI in Initial Teacher Training: A Motivational Analysis. International Journal of Information and Education Technology, 16(1).
77. Quang Sang, N., Thao, N., Tam, D. and Ly Duc, M., 2025. Evaluating Gpt-Enabled Learning: Challenges and Opportunities for Academic Performance in a Global Context. Nguyen and Tam, Do and Ly Duc, Minh, Evaluating Gpt-Enabled Learning: Challenges and Opportunities for Academic Performance in a Global Context.
78. Paullet, K., Pinchot, J., Kinney, E. and Stewart, T., 2025. Utilizing GPTZero to Detect AI-Generated Writing. Information Systems Education Journal, 23(6), pp.44-52.
79. Wadhwani, A. and Mohadeb, P., 2025 Harnessing Artificial Intelligence for Transforming Education and Accelerating Research: Opportunities, Challenges, and Future Directions.
80. Kaushik, A., Yadav, S., Browne, A., Lillis, D., Williams, D., Donnell, J.M., Grant, P., Kernan, S.C., Sharma, S. and Arora, M., 2025. Exploring the impact of generative artificial intelligence in education: a thematic analysis. arXiv preprint arXiv:2501.10134.
81. Bulut, O., Beiting-Parrish, M., Casabianca, J.M., Slater, S.C., Jiao, H., Song, D., Ormerod, C.M., Fabiyi, D.G., Ivan, R., Walsh, C. and Rios, O., 2024. The rise of artificial intelligence in educational measurement: Opportunities and ethical challenges. arXiv preprint arXiv:2406.18900.
82. PrajapatI, M.A.B., 2024. Artificially Intelligent in Education:" Redefining Learning in the 21st Century". Educational Resurgence Journal.
83. Singh, M.V.K. and Sinha, K., 2025. How AI Is Reshaping Recruitment, Personalized Learning, Performance Tracking and Workforce Planning. International Journal of Engineering Development and Research, 13(4), pp.294-317.
84. Ogwueleka, F.N., 2025. Plagiarism detection in the age of artificial intelligence: current technologies and future directions. AI and ethics, academic integrity and the future of quality assurance in higher education, 10.

85. Jokhan, A., Chand, A.A., Singh, V. and Mamun, K.A., 2022. Increased digital resource consumption in higher educational institutions and the artificial intelligence role in informing decisions related to student performance. Sustainability, 14(4), p.2377.
86. Tariq, M.U., 2026. AI-Driven Curriculum Design in Higher Education: Frameworks for Future-Ready Learning Ecosystems. In AI Education Strategies for Future-Proofing Curriculum Design (pp. 21-46). IGI Global Scientific Publishing.
87. Omirali, A., Kozhakhmet, K. and Zhumaliyeva, R., 2025. Digital Trust in Transition: Student Perceptions of AI-Enhanced Learning for Sustainable Educational Futures. Sustainability, 17(17), p.7567.
88. Abdelaal, R.M., 2026. Integrating Artificial Intelligence Into the Industrial Engineering Discipline: Bridging Theory and Classroom Practice. In AI-Powered Pedagogy, Academic Transformation, and Faculty Empowerment (pp. 239-264). IGI Global Scientific Publishing.
89. Juárez, R., Hernández-Fernández, A., Camargo, C.B. and Molero, D., 2026. Nested Learning in Higher Education: Integrating Generative AI, Neuroimaging, and Multimodal Deep Learning for a Sustainable and Innovative Ecosystem. Sustainability, 18(2), p.656.
90. Nwozor, A., 2025. Artificial intelligence (AI) and academic honesty-dishonesty nexus: Trends and preventive measures. AI and ethics, academic integrity and the future of quality assurance in higher education, 27(3).

Cite this Article: Kabanda, F., Dube, S. (2026). A Conceptualized Framework of Ethical and Responsible Use of Artificial Intelligence Tools in Higher Education Ecosystem. International Journal of Current Science Research and Review, 9(3), pp. 1487-1498. DOI: https://doi.org/10.47191/ijcsrr/V9-i3-37

 *Corresponding Author: Sibusisiwe Dube