****

**SCHOOL OF PURE AND APPLIED SCIENCES**

**COURSE: BACHELORS OF SCIENCE IN INFORMATION TECHNOLOGY**

**UNIT CODE: SPI 2401**

**UNIT TITLE: IT PROJECT 1**

**PROJECT PROPOSAL:**

**PROMOTING RESPONSIPLE AI USE IN EDUCATION THROUGH A PLATFORM FOR STUDENTS NETWORKING, COLLABORATION AND BALANCED LEARNING.**

**BY:**

**STUDENT NAME: YEGO COLLINS KIMELI**

**STUDENTS REG NO: CT100/G/14111/21**

**SUPERVISOR’S NAME: DR. EDWIN IRERI**

**[OCTOBER, 2024]**

# **Dedication**

This project is dedicated to all students and educators striving to ensure a balance between innovation and integrity in learning. To students who are dedicated to knowledge development, critical thinking, and academic independence within a rapidly evolving technological era. May this project serve as a tool to inspire responsible and meaningful engagement with technology in education, paving the way for more effective and holistic learning experiences.

# **Acknowledgement**

I would like to express my deepest gratitude to everyone who has contributed to the effectiveness of this project. First of all, I thank my project supervisor, Mr. Edwin Ireri for his indispensable guidance, constructive feedback, and continuous support throughout the research and development phases. Your insights and expertise have been instrumental in shaping the direction and depth of this work. I extend my appreciation also to my family and friends for their support in this work. Your confidence in my capabilities and constant pieces of advices and encouragement kept me focused and motivated even during the most challenging moments. Lastly, I acknowledge all the educators and students who have inspired the important ideas of this project. Your commitment in finding a balance between technology and traditional learning has motivated me to come up with a solution that fosters growth, responsibility and meaningful networks in education. Thank you all for being part of this work.

Table of Content

Contents

[**Dedication** 2](#_Toc184056051)

[**Acknowledgement** 3](#_Toc184056052)

[**Abstract** 7](#_Toc184056053)

[**Chapter One** 8](#_Toc184056054)

[**Introduction** 8](#_Toc184056055)

[**Background** 8](#_Toc184056056)

[**Current/Existing System** 9](#_Toc184056057)

[**ChatGPT** 9](#_Toc184056058)

[**Grammarly** 9](#_Toc184056059)

[**Brainly** 10](#_Toc184056060)

[**Discord** 10](#_Toc184056061)

[**Problem Statement** 10](#_Toc184056062)

[**Proposed System** 11](#_Toc184056063)

[**Networking and collaboration** 11](#_Toc184056064)

[**AI Moderation Tools** 11](#_Toc184056065)

[**Educator control panel** 11](#_Toc184056066)

[**Analytics Dashboard** 11](#_Toc184056067)

[**Purpose of the Study** 12](#_Toc184056068)

[**General Objective** 12](#_Toc184056069)

[**Specific Objectives** 12](#_Toc184056070)

[**Justification** 12](#_Toc184056071)

[**Scope** 13](#_Toc184056072)

[**Limitations** 13](#_Toc184056073)

[**Significance of the Study** 13](#_Toc184056074)

[**Definition of Key Concepts** 14](#_Toc184056075)

[**Chapter Two** 15](#_Toc184056076)

[**Literature Review** 15](#_Toc184056077)

[**Introduction** 15](#_Toc184056078)

[**Related Literature Review** 15](#_Toc184056079)

[**The Use of Artificial Intelligence in Education and Consequent Effects on Student Achievement** 15](#_Toc184056080)

[**The Danger of AI Overreliance and its Connection with Student Dependency** 16](#_Toc184056081)

[**Interaction between Students, Group Work and Co-operative Learning in School Settings** 16](#_Toc184056082)

[**Current Educational Platforms and Their Flaws** 17](#_Toc184056083)

[**AI's influence on academic integrity and learning of ethical concepts** 17](#_Toc184056084)

[**Matching According to Skills and Its Effect on Students** 17](#_Toc184056085)

[**Managing AI communication to promote learning autonomy** 18](#_Toc184056086)

[**Gaps/Lacunas** 18](#_Toc184056087)

[**Insufficient Frameworks for Responsible AI Use** 18](#_Toc184056088)

[**Limited Implementation of Collaborative Skill-Based Models** 19](#_Toc184056089)

[**Lack of Moderated AI Systems in Education** 19](#_Toc184056090)

[**Underdeveloped Strategies to Address Academic Integrity with AI** 19](#_Toc184056091)

[**Context Diagram/Conceptual Framework** 19](#_Toc184056092)

[**Conclusion** 20](#_Toc184056093)

[**Chapter Three** 21](#_Toc184056094)

[**Methodology** 21](#_Toc184056095)

[**Introduction** 21](#_Toc184056096)

[**Development Methodology** 21](#_Toc184056097)

[**The Scrum framework comprises the following phases** 22](#_Toc184056098)

[**Requirements Gathering and Analysis** 22](#_Toc184056099)

[**System Design** 22](#_Toc184056100)

[**Development and Implementation** 22](#_Toc184056101)

[**Testing and Evaluation** 23](#_Toc184056102)

[**Deployment and Maintenance** 23](#_Toc184056103)

[**Justification of Methodology** 23](#_Toc184056104)

[**Focus on User-Cantered Design** 24](#_Toc184056105)

[**Flexibility to Address Evolving Needs** 24](#_Toc184056106)

[**Continuous Improvement and Refinement** 24](#_Toc184056107)

[**Enhanced Collaboration and Transparency** 24](#_Toc184056108)

[**Data Collection** 25](#_Toc184056109)

[**Surveys and Questionnaires** 25](#_Toc184056110)

[**Focus Groups** 25](#_Toc184056111)

[**Usage Analytics** 25](#_Toc184056112)

[**Interviews with Educators** 26](#_Toc184056113)

[**Data Analysis** 26](#_Toc184056114)

[**Descriptive Statistics** 26](#_Toc184056115)

[**Thematic Analysis** 26](#_Toc184056116)

[**Comparative Analysis** 26](#_Toc184056117)

[**Trend Analysis** 27](#_Toc184056118)

[**Chapter Conclusion** 27](#_Toc184056119)

[**References** 28](#_Toc184056120)

[**Appendix A: Project Timeline** 33](#_Toc184056121)

[**Appendix 2: Hardware Requirements** 33](#_Toc184056122)

[**Appendix 3: Software Requirements** 34](#_Toc184056123)

[**Appendix 4: Budget Estimation** 34](#_Toc184056124)

# **Abstract**

The proposed project deals with increasing students' over reliance on AI in completing their assignments at the expense of critical thinking and learning. It proposes an educational platform that supports responsible AI use, promotes student networking, and encourages collaboration among them. Equipped with AI moderation features, interactive skills-building exercises, and peer collaboration features, the platform is designed to stimulate activity learning and meaningful engagement. The project is executed by following an Agile development approach, ensuring improvements with continuous user feedback. This platform balances AI benefits with academic integrity to support students in developing the skills they need to succeed. It equips them to solve actual problems in education and professional settings.

# **Chapter One**

## **Introduction**

This chapter defines the research and, more specifically, the exponential rise of AI in the educational context and students' behaviour as a result (Obionwu, 2022). AI has changed educational tools considerably, providing students with powerful features for doing assignments, research, and editing. However, such a high availability has also had implications for students who now rely on AI for academic tasks that should help them develop their critical thinking and problem-solving abilities (Chen, 2024). This chapter looks at a brief history of how AI took place in the education system, also looks at various systems currently in the market, equally completes a discovery of the actual problem of students heavily relying on AI for their assignments in this study, defines the purpose, objectives and expected value of this research. Moreover, it details the current situation and the recommended system to reduce over-reliance by focusing on students and encouraging cooperation.

## **Background**

The evolving technology, especially the impact of AI, has been incredible and known to have affected most sectors, including education (Fell, 2024). AI has transformed how students study and approach their assignments, from writing assistants and plagiarism detection services that check grammar and syntax to sophisticated algorithms that can recommend learning materials tailored to student needs (Rashid & Karim, 2024). Nowadays, many students turn to platforms like Grammarly, ChatGPT, or Khan Academy to enhance their writing skills, get feedback, or even help solve intricate issues. In a more general manner, education benefitted from the application of AI by opening up learning resources and offering tools for developing students.

Nevertheless, with these advancements come new concerns. The use of AI-based applications is broader than that of students, who will now rely on such applications as the primary source of assistance for their tasks. In fact, despite utilizing AI tools to augment learning, the Paradigm Zero impact is that it can merely become a prop for student learning while overlooking crucial elements involving critical thinking, synthesis, and evaluation (Laksono, 2023). With advanced AI introduced in an academic setting, overreliance is a concern that must be considered as these tools advance and integrate into the educational process. This matter demonstrates the possible need to find a middle ground and ensure that AI makes the work more accessible for students. Still, it only partially takes over for genuine efforts and proper thinking.

## **Current/Existing System**

Many platforms that are available to support students in their educational endeavours in content generating, grammatical checking, and math problem-solving (None Anghelo Josué et al., 2023). However, these systems can significantly facilitate learning, although they do not promote activity. Here are some widely used systems and the potential issues they present:

### **ChatGPT**

Students often employ ChatGPT and similar AI-driven textual content generation interfaces to provide solutions to specific questions or complete their tasks (16 Best EdTech Platforms | Future Education Magazine, 2023). These platforms are helpful in brainstorming and coming up with ideas; however, plagiarism becomes systemic when students copy the AI-generated content without understanding or personal effort.

### **Grammarly**

This is a grammar-check tool used mainly when the author desires to get feedback on grammar, punctuation, and style instantly. While advantageous, errors corrected by Grammarly are detailed. As a result, students may rely on something other than the tool rather than learning and applying grammar rules on their own. As a result, students might need more writing skills.

### **Brainly**

Brainly is a Q&A website where students can ask questions, post their homework problems, and receive answers from other users or Brainly AI. Although this platform allows quick access to solutions, the absence of further analysis or vigorous debates could lead to merely imitating the answers.

### **Discord**

Discord is applicable in study groups or academic discussions to connect students and share resources. However, in many cases, students utilize the platform not for cooperation but rather for searching for ready-made solutions. It can impede learning since students may passively absorb information instead of engaging in scholarly dialogue.

Even though these platforms provide handy features, their setup and deployment encourages passive usage or excessive reliance on artificial intelligence. This gap can be used to create a system that fosters students' engagement, problem-solving abilities, and effective use of artificial intelligence in learning environments.

## **Problem Statement**

The increasing usage of AI in assignments leads to concerns that students are now dependent on technology to do the work. Students use AI-generated content or AI to solve a problem as a ready-made way of getting an answer (Zhai et al., 2024). This affects creativity and critical thinking skills among students. Over-reliance interferes with natural learning and may result in cheating because a student would prefer to rely on AI than learn. This requires for more learning environments that integrate AI while placing equal or greater emphasis on student autonomy, peer cooperation, and adherence to academic rules. It is vital to develop a solution to extend structured support and engagement to students for learning in a peer-to-peer platform that motivates and nudges the students to sharpen their skill sets without relying on AI assistants.

## **Proposed System**

This study will focus on establishing a Student Networking and Skill-Sharing Platform to minimize students' reliance on AI for their tasks. It vastly differs from the conventional educational models and relies on group work and peer coaching instead of artificial intelligence. The platform's core features include:

### **Networking and collaboration**

The system allows the students to create and join discussions groups and the study networks. It facilitates the sharing of the documents and projects boards for teamwork, enhancing the collaboration among students. It also encourages peer to peer learning by connecting students with similar academic goals.

### **AI Moderation Tools**

The system implements the use of AI moderation tools in monitoring and tracking the student’s interactions with AI. This provides real time feedback and alerts when misuse or overdependence is detected. It integrates content analysis to ensure AI generated outputs align with educational standards.

### **Educator control panel**

The system enables the teachers to customize AI usage guidelines and moderation settings. They can set tasks, monitor progress and provide targeted feedback.

### **Analytics Dashboard**

This system feature will track the key metric like student engagement, learning progress and collaboration patterns. It enables the students to monitor their own progress and adjust learning habits accordingly. It generates useful insights for educators and administrators to improve the learning process

This proposed platform aims to satisfy the gaps left by the current educational tools by providing a structured environment for training students.

## **Purpose of the Study**

To design a learning environment in which students use AI moderately in their work through group projects, independent study, and learning required academic skills.

## **General Objective**

To develop a Student Networking and Skill-Sharing Platform that will encourage individual learning through networking and reduce the students' reliance on Artificial Intelligence in solving tasks, thereby improving critical thinking and skill development.

## **Specific Objectives**

1. To develop a platform that promotes active interaction with educational content to consciously minimize students' reliance on AI solutions for studying.
2. To design an effective strategy that will match students with similar academic abilities and aptitudes to facilitate positive and constructive learning partnerships among them.
3. To promote cooperative structures that facilitate group work on tasks to foster real learning and retention of knowledge and critical thinking skills.

### **Justification**

This study is pertinent for addressing some issues arising from students' growing usage of AI systems. It is also important to note that students might rely on more advanced AI as a quick fix rather than a studying tool, which gives rise to problems such as skill degradation and dishonesty. Since this research focuses on creating a platform that fosters collaboration, mentorship, and proper use of AI, this research supports education (Zhai et al., 2024). It serves as a model for integrating technology into learning. The study also has implications for educators looking for pedagogical approaches or interventions that may promote academic integrity and minimize students' reliance on online resources.

## **Scope**

The areas of interest in this study will involve the conceptualization and implementation of the proposed Student Networking and Skill-Sharing Platform and the pilot study of the same. The intended audience will be students of higher learning institutions, and the platform will offer features that support collaborative learning, skills enhancement, and responsible student conduct. Some of these freedoms include peer matching, which allows students to find peers that have similar needs and interests; resources sharing, which will enable students to have access to a variety of resources that would help them in their academic journey; limited AI aid, as it will help students learn independently without relying overly much on help from the system or an expert teacher.

## **Limitations**

1. Adoption and Engagement, critical factor is the openness of students to use the collaborative learning platform more than AI-based solutions; however, the culture of resistance to change might be a potential issue.
2. Technical Accessibility, students may be technologically naive and may not have an adequate internet connection to participate in the platform effectively.
3. Content Moderation, it may be challenging to ensure that all interactions are positive and within the platform's scope, especially if the platform is peer-to-peer.

## **Significance of the Study**

The implications of this research are highly valuable for the field of education since it aims to introduce a novel strategy for technology-enhanced learning that fosters academic honesty and meaningful education. With a spotlight on teamwork and skills acquisition, the proposed solution can address over dependency on artificial intelligence, making technology-driven instruction fundamentally human-cantered, as it should be. The findings can be helpful for educators, institutions, and governments interested in enhancing learners' autonomy with the help of AI.

## **Definition of Key Concepts**

**Over-Reliance on AI**- The reliance on artificial intelligence tools among students while doing assignments, thus undermining critical thinking and self-learning abilities.

**Peer-to-Peer Learning**- Collaborative teaching and learning approach in which students jointly contribute towards knowledge acquisition by sharing ideas and experiences.

**Skill-Based Matching**- A function that groups the students based on their abilities and learning requirements, allowing for authentic and equitable social interactions within the academic setting.

**Collaborative Learning Tools**- Activities aimed at promoting students' collaboration on coursework, sharing of the workload and resources, and problem-solving but in such a way that is not entirely dependent on AI.

**Academic Integrity**- Importance of educational integrity: students promise to adhere to ethical standards and practices by completing assignments and learning truthfully without plagiarizing.

# **Chapter Two**

# **Literature Review**

## **Introduction**

This chapter reviews the literature on artificial intelligence in learning environments, specifically analysing the problem of students' over dependency on AI for assignments and learning. The use of AI in education as it progresses offers numerous benefits, including the capability to deliver instruction according to the individual student's needs, constant availability of resources, and faster execution of tedious academic tasks. However, such advantages have contributed to new vices, including students relying on AI to address problems and completing assignments (Adewale et al., 2024). This reliance can undermine cognitive participation and hamper critical thinking skills, which are crucial when acquiring education. This literature review will outline the contemporary approaches to AI in education, students' dependence, collaboration patterns, and moderation schemes. This chapter defines the scope of the proposed solution by pointing out that previous research needs a balanced approach toward the use of AI in learning.

## **Related Literature Review**

### **The Use of Artificial Intelligence in Education and Consequent Effects on Student Achievement**

Incorporating artificial intelligence in educational systems has changed how students learn. Language models, virtual assistants, and automated grading systems are some examples of AI that have made learning affordable and accessible to individuals with diverse needs (Kamalov, 2023). As the (Saihi, 2024) pointed out, these tools can be used in a personalized learning environment, and they can recommend materials and concepts that fit the pace of each learner. However, some critics have noted that the ease provided by AI technologies will cause students to be disengaged from gaining knowledge. According to the (Nykonenko, 2023) students perceive AI as a way to complete an assignment without striving to understand it deeply. This dynamic hampers their critical thinking and problem-solving abilities because they still rely on answers provided by AI without thoroughly studying the materials.

### **The Danger of AI Overreliance and its Connection with Student Dependency**

As cited earlier by researchers, the dependency on AI has become a prominent issue, especially in learning environments. (Salah, 2023) and (Zhai, 2024) illustrate the adverse psychological effects of relying on AI, pointing out that students are overly dependent on receiving ready answers and solutions to problems. Like (Baron, 2024), embracing an overly dependent AI diminishes the students' critical thinking skills for analysing and synthesizing information because they are inclined to accept the results proffered by the AI automatically. Besides, studies prove that learners who rely on AI for their tasks have poor retention rates since they merely skim through content without actively engaging in problem-solving (Zunaidah, 2023, August).

### **Interaction between Students, Group Work and Co-operative Learning in School Settings**

Group work emphasizes interaction and engagement with peers in the learning process. In their learning, students can only progress to the next level when they are under the guidance of a more capable partner, as Veldman, (2020) emphasized in his concept of the Zone of Proximal Development. This highlights that peer-based learning environments enable students to share knowledge, ask questions, and engage on a deeper level, which leads to higher levels of thinking. For instance, in expanding AI reliance, (Awofala, 2020) studies argue that teachers should integrate AI resources with peer mentoring, where students can use AI as supplementary materials while primarily focusing on interactions with their peers. Collaborative learning helps offset dependency on AI, thus enabling skills that are key in critical thinking and creativity.

## **Current Educational Platforms and Their Flaws**

Brainly, Discord and Stack Overflow are the platforms that students use the most to post questions and get answers from fellow students or knowledgeable persons. These platforms facilitate the sharing of knowledge and offer community support and encouragement. However, the (Sofi-Karim, 2023) research identifies fundamental limitations within these platforms; have preconditions for active learning, have traits that encourage passive information absorption. As (Abuhassna et al., 2020) has pointed out, the structure of these platforms provides students with ready answers and does not encourage them to engage in problem-solving. Also, many platforms offer unlimited AI-generated solutions, which can increase students' explanations' reliance and does not encourage them to learn AI principles.

### **AI's influence on academic integrity and learning of ethical concepts**

In light of recent advancements in information technologies, such as integrating artificial intelligence in learning institutions, concerns over academic dishonesty have emerged, as highlighted by the Fowler, (2023). There are questions of ethics when it comes to students using AI tools to replicate answers or produce material with little preparation, exacerbating plagiarism concerns. According to Vetter, (2024), while AI can increase efficiency and effectiveness, it introduces opportunities for cheating. A stronger inclination towards using AI for accomplishing tasks is likely to result in engaging with content in a limited manner, contrary to educational values of maintaining integrity and personal development. Scholars propose the creation of ethical standards and integration elements within AI systems that would prevent students from engaging in unethical behaviour (Sullivan, 2023).

### **Matching According to Skills and Its Effect on Students**

Compared to other learning studies, skill-based matching is advantageous in learning platforms. Research by Anwar, (2023) revealed that practicing with counterparts who possess complementary knowledge also improves students' knowledge and critical thinking skills. The benefits of skill-based matching can be especially prominent in reducing AI dependence's impact due to the encouragement of students' direct and active participation in solving problems with the help of their peers. In addition, (Karatas, 2021) also pointed out that skill-based matching contributes to improving the social aspect of learning as students with diverse learning difficulties will be able to work together to address the challenges they face in learning, thereby minimizing the need for constant assistance from the AI system.

### **Managing AI communication to promote learning autonomy**

The Lee, (2022) suggests that the role of AI in education indicates that AI should assist users in completing tasks and should not directly solve them, as it becomes problematic when users constantly interact with AI unrestrictedly. Facilitated artificial intelligence can help learners develop their learning capacity rather than just wanting quick solutions. The (Niu, 2024) recommends developing AI systems that require students to contemplate questions or begin problem-solving before providing answers. This approach is intended to ensure that students engage with AI tools in a balanced manner, such that AI serves as an intelligent assistant and not the primary solver of problems.

## **Gaps/Lacunas**

The literature review reveals several gaps in current studies include;

### **Insufficient Frameworks for Responsible AI Use**

Although many examples showcase the positive impact of AI in educational environments, very few sources analyse the frameworks for the effective and responsible incorporation of AI into educational processes (Partovi & Yongpradit, 2024). It is also necessary to study the possibilities of continuing learning with AI help while minimizing the AI system's role.

### **Limited Implementation of Collaborative Skill-Based Models**

While the advantages of this approach to skill-based matching are known, only some significant platforms currently use it. Additional research is needed to determine the degree of the intervention's efficacy in decreasing reliance on AI and increasing peer collaboration.

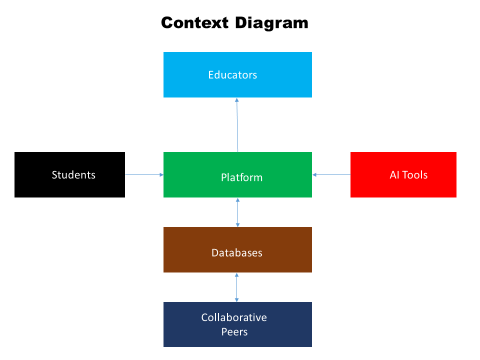
### **Lack of Moderated AI Systems in Education**

Most educational platforms do not restrict AI assistance, pushing the students to rely on them excessively. Research question 2 is yet to be researched to understand how moderated AI support may promote independent problem-solving and active engagement with general content and academic material.

### **Underdeveloped Strategies to Address Academic Integrity with AI**

The misuse of Artificial Intelligence is a problem for ethical consideration. However, the literature review must include detailed efforts to develop a practical framework for maintaining academic honesty in an AI-integrated learning environment.

## **Context Diagram/Conceptual Framework**

****

The context diagram depicts the position of the AI system, students, and collaborative learning features within the envisioned educational platform.

## **Conclusion**

This chapter presented a brief literature on AI in education, its benefits, problems, and the problem of dependence on students. Current research findings indicate the efficiencies of collaborative learning and skill matching and their shortcoming, which include a need for more structures/guidelines on how to apply AI responsibly, whereby moderated assistance is also not provided. These have guided the development of this study's conceptual framework, which consists of peer interaction, skill-based matching, and using controlled AI as the middle-ground in learning. The process of applying and validating this framework is described in detail in the subsequent chapter.

# **Chapter Three**

# **Methodology**

## **Introduction**

This particular chapter provides a detailed account on the planned strategy with regards to development and evaluation of the desired educational platform with the view of mitigating on the over reliance of students on AI tools on their assignments (Daraojimba, 2024). Based on this chapter, Kano methodology can construct a platform that meets the educational requirements but does not compromise the security of AI by following a user-oriented approach, analysing the appropriate type of data, and utilizing rigorous analytical processes. This section also explains the rationale for the approach that has been taken in building the model, the methods that have been used in the data collection activities, and some of the methods that will be used in the data analysis activities for evaluating the effectiveness of the suggested platform for enhancing the learning behaviours of the students.

## **Development Methodology**

The approach to be used in this specific software development project is the Agile Software Development and the framework to be used in this project is the Scrum (Milne, 2022). The main goal of the agile approach is based on frequent progress, which will be suitable for educational platforms as they can require updates due to the interest of users or some real-life feedback. Scrum format with clearly established sprints and regular inspection/adaptation meetings allows the platform to evolve and optimize the effectiveness of the use of features through feedback and alterations. In this project, the development process is split into segments called sprints, and each sprint in the project should take around two weeks. These sprints enable the project team to work on or improve specific features of the project within pre-specified timelines. For example, one sprint can be devoted to enhancing the AI moderation module, while the other sprint can be dedicated to improving peer-to-peer support features. The last activity that is conducted after completion of each sprint is the review of progress and incorporating the feedback received from the user – testing to ensure the project is on track to provide a solution that was envisaged at the start of the project.

## **The Scrum framework comprises the following phases**

### **Requirements Gathering and Analysis**

This involves gathering the requirements in the initial phases by carrying out a series of consultations with educators, students, and IT specialists (Team Asana, 2024). From these groups, the development team defines the core functionalities this platform should have – usage of AI, peer-to-peer learning, and skill-based support. This phase also considers technical specifications such as platform compatibility, security features, and data storage.

### **System Design**

Subsequent to the requirements phase, the design phase aims at coming up with a comprehensive architecture of the proposed platform. Some of these factors are the choice of a simple and friendly user interface, the development of a strong database management platform, and the configuration of a versatile back-end support in accommodating the development of the AI moderation tools and collaboration modules. The fourth step involves the development of wireframes and prototypes to show the layout of the platform and its functionality for ease of access by the stakeholders.

### **Development and Implementation**

The coding and development of the components of the platform are done in an incremental manner through a number of sprints. During each sprint, focused aspects like the AI moderation tool, the peer to peer matching or the skill-building UI/UX is implemented, with a division of labour to ensure optimal functionality of every component. Sprint review meetings are conducted at the end of each sprint to assess progress, review risks and potential adjustments to the project objectives. This phase also involves testing each feature of the system to ensure it is working as required and does not interfere with other features of the system.

### **Testing and Evaluation**

The end of each sprint involves testing to determine whether the platform is user-friendly, compliant, efficient, and aligns with the project aims. Pre-qualifiers: Students, teachers, workers, etc. are to be recruited to engage with the platform and give feedback pertaining to its usability, optimization, and ability to capture and sustain attention. This feedback is then used to make changes to the platform so that it is conducive to independent learning and reduces the dependence on the AI tools.

### **Deployment and Maintenance**

Once the platform is implemented with all the test scenarios, the next step of piloting the platform is done in an educational environment. The pilot phase is to determine the last technical problems, the difficulties of using the software, or optimization options (Abhaya, 2024). Ongoing checks and fixes are carried out here, enabling developers to address users’ feedback or conditions that may make the platform suboptimal. Maintenance is performed frequently involving bug fixing and system enhancements to make certain that the platform is still operational, void of glitches that may hinder the delivery of educational content.

## **Justification of Methodology**

The Agile Scrum methodology is selected as the most suitable development model for this project for several key reasons which include;

### **Focus on User-Cantered Design**

Another advantage of Agile Scrum is the emphasis placed on the voice of the customer, which is crucial for the creation of a platform that is designed to have a positive impact on the behaviour of students. The use of feedback or feedback cycles helps the development team to incorporate ideas from educators and students because the platform’s goal is to support education.

### **Flexibility to Address Evolving Needs**

AI technologies and educational trends are dynamic fields in the sense that the aspects and features that define them are changing rapidly to cater for the ever-shifting needs of end-users and new technological innovations. The use of Agile Scrum also fosters the inclusion of incremental changes since the platform can easily incorporate new features or alter specific functions based on dynamic educational demands.

### **Continuous Improvement and Refinement**

The fact that Agile works in small cycles of development helps in minimizing risks since features are deployed and tested then enhanced in a subsequent cycle if need be. In case of such functions involving higher level of AI like the moderation and learning systems, or any other similar applications and content delivery format, this process is crucial to reduce errors and offer a more fluid interface to the end user.

### **Enhanced Collaboration and Transparency**

By adopting Agile Scrum, allow collaboration between the development team, educators, and student users. This constant synergy helps to ensure the effectiveness of each of the developed phases and their compliance with the educational process, as well as opportunities for a quick transition to the practical use of the created and tested project.

## **Data Collection**

Another notable aspect of this project is data collection, which yields valuable information about user requirements, platform functionality, and the degree to which the system fosters self-learning behaviours (Xu, 2020). Several data collection methods were employed:

### **Surveys and Questionnaires**

Questionnaires were administered to the students and teachers prior to development to find out their present attitude towards the use of AI in the learning process, the dependency they have on the AI, and the preferred mode of getting help on the assignments (Holmes, 2023). Subsequent surveys after the implementation of the platform included questions concerning the user satisfaction, the level of activity, and the perceived advantage and disadvantage of using the platform. These surveys offered numerical information regarding the usage of the platform and how effectively the platform worked for the intended purpose.

### **Focus Groups**

Students, teachers, educational counsellors, and other stakeholders were interviewed in small focus group sessions to obtain their qualitative perception about the platform in terms of functionality, usability, and engagement. These debates provided a deeper understanding of the users’ perception of AI moderation and peer support to identify any barriers or preference that may not have been obvious from the surveys.

### **Usage Analytics**

Once the tool was implemented, it was designed to monitor several usage parameters, such as the usage of AI tools, participation in peer learning areas, and time spent on development tasks. Self-reported usage data was gathered in order to analyse usage patterns and trends, including the frequency of AI usage over time and the extent to which students were using the platform’s collaborative learning functionalities.

### **Interviews with Educators**

Semi-structured interviews were also carried out with educators to comprehensively capture their perceptions of how this platform impacted students’ learning behaviours and activities. It is important to note that the opinions of the teachers were informative, showing how the platform impacted the encouragement of independent study and the limitation of over-reliance on artificial intelligence.

## **Data Analysis**

The collected data was analysed using both qualitative and quantitative methods to provide a comprehensive assessment of the platform’s effectiveness:

### **Descriptive Statistics**

Quantitative data collected from surveys were then summarized to illustrate the pattern regarding the usage of AI tool, student interaction, and user satisfaction levels. Means statistics assisted in determining patterns concerning students’ usage of the platform and their perception of the product’s value to their learning (Khoa, 2023).

### **Thematic Analysis**

To analyse the focus group discussion and open-ended questionnaire data, thematic analysis was applied as the main methodology. This approach entailed applying codes to determine recurring aspects regarding user attitudes, experiences, and issues faced. For example, it incorporated concepts like people’s interest in peer-to-peer connectivity or their worry with the ability of al machines to moderate posts and shared these with the development of the platform.

### **Comparative Analysis**

Results obtained in pre-surveys were compared to those obtained in post-surgeries to establish the level of interaction students had with AI before and after engaging in the platform. This allowed for a focus on the behaviours that may have changed due to the use of the platform and a measure of the success of the platform in promoting independence. For instance, a decline in the self-reported use of AI once participants were exposed to platform would imply that the platform helped to reduce reliance on AI for course work among students.

### **Trend Analysis**

The usage analytics was analysed over time to determine the patterns of use of the platform by the students. The analysis utilized in this study aided in establishing how student engagement in the skill-building exercises and peer-supported learning modules impacted the degree of dependence on AI. Such changes as the level of peer collaboration or the frequency of AI tool use signified that other and more successful forms of working were being aligned with the goals of the project.

## **Chapter Conclusion**

This chapter discussed the systematic approach that was followed to design, build, and assess the proposed platform to combat over-dependence on AI peers by students. The Agile Scrum development model was selected due to its iterative and customer-oriented strategy, which lets for constant modifications based on clients’ feedback. Desk research involved the use of surveys, focus groups and usage analytics about the behaviour of the users and efficiency of the platform. In this study, some structured analysis has been used to determine whether or not the platform has achieved its goal of Creating Awareness for Responsible AI and Encouraging Independent Learning. This classical approach provides a solid framework for achieving the intended educational outcomes and overcoming the difficulties inherent in using AI in a learning environment.

# **References**

‌ Abhaya. (2024, March 21). *Creating Test Scenarios Demystified: Your Ultimate How-To Guide*. Medium. https://medium.com/@abhaykhs/creating-test-scenarios-demystified-your-ultimate-how-to-guide-58914d05da77

‌ Abuhassna, H., Al-Rahmi, W. M., Yahya, N., Zakaria, M. A. Z. M., Kosnin, A. Bt. M., & Darwish, M. (2020). Development of a new model on utilizing online learning platforms to improve students’ academic achievements and satisfaction. *International Journal of Educational Technology in Higher Education*, *17*(1). https://doi.org/10.1186/s41239-020-00216-z

‌ Adewale, M. D., Azeta, A., Adebayo Abayomi-Alli, & Sambo-Magaji, A. (2024). Impact of artificial intelligence adoption on students’ academic performance in open and distance learning: A systematic literature review. *Heliyon*, *10*(22), e40025–e40025. https://doi.org/10.1016/j.heliyon.2024.e40025

‌ Holmes, A. G. D. (2023). The Design and Use of Questionnaires in Educational Research: A New (Student) Researcher Guide. *Innovare Journal of Education*, 1–5. https://doi.org/10.22159/ijoe.2023v11i3.47599

‌ Milne, A. (2022, June 29). *An Ultimate Guide on Agile Scrum Methodology?* Net Solutions. https://www.netsolutions.com/insights/what-is-scrum-development-agile-scrum-methodology/

‌ None Anghelo Josué, Bedoya-Flores, M. C., Mosquera-Quiñonez, E. F., Ángel Enrique Mesías-Simisterra, & José Vicencio Bautista-Sánchez. (2023). Educational Platforms: Digital Tools for the teaching-learning process in Education. *Ibero-American Journal of Education & Society Research*, *3*(1), 259–263. https://doi.org/10.56183/iberoeds.v3i1.626

‌ Partovi, H., & Yongpradit, P. (2024, January 18). *7 principles on responsible AI use in education*. World Economic Forum. https://www.weforum.org/stories/2024/01/ai-guidance-school-responsible-use-in-education/

‌ Team Asana. (2024, January 31). *6 Steps to Requirements Gathering for Project Success [2024] • Asana*. Asana. https://asana.com/resources/requirements-gathering

‌ Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students’ cognitive abilities: a systematic review. *Smart Learning Environments*, *11*(1). https://doi.org/10.1186/s40561-024-00316-7

*16 Best EdTech Platforms | Future Education Magazine*. (2023, June 2). Future Education Magazine. https://futureeducationmagazine.com/16-best-edtech-platforms/

Anwar, M. F. Z. (2023). The Effect of Make-a-Match Method towards Students’ Writing Skill in Procedure Text at SMP N 2 Bumiayu. State Islamic University.

Awofala, A. O., & Lawani, A. O. (2020). Examining the efficacy of co-operative learning strategy on undergraduate students’ achievement in mathematics. International Journal of Pedagogy and Teacher Education, 4(1), 59-82. <https://jurnal.uns.ac.id/ijpte/article/view/33402>

Baron, J. V. (2024). A Double-Edged Sword: Examining the Link between Students’ Dependence on Artificial Intelligence (AI) and their Psychosocial Maturity. TWIST, 19(3), 339-344. <https://orcid.org/0000-0003-4296-0651>

Chen, Y., & Ryu, M. H. (2024). Chinese Consumers’ Attitudes toward and Intentions to Continue Using Skill-Sharing Service Platforms. Behavioral Sciences, 14(9), 765. https://www.mdpi.com/2076-328X/14/9/765

Daraojimba, E. C., Nwasike, C. N., Adegbite, A. O., Ezeigweneme, C. A., & Gidiagba, J. O. (2024). Comprehensive review of agile methodologies in project management. Computer Science & IT Research Journal, 5(1), 190-218. <https://doi.org/10.51594/csitrj.v5i1.717>

Fell, J. (2024, April 26). *The current state of AI, according to Stanford’s AI Index*. World Economic Forum. https://www.weforum.org/stories/2024/04/stanford-university-ai-index-report/

Fowler, D. S. (2023). AI in Higher Education: Academic Integrity, Harmony of Insights, and Recommendations. Journal of Ethics in Higher Education, (3), 127-143. <https://doi.org/10.26034/fr.jehe.2023.4657>

Kamalov, F., Santandreu Calonge, D., & Gurrib, I. (2023). New era of artificial intelligence in education: Towards a sustainable multifaceted revolution. Sustainability, 15(16), 12451. <https://doi.org/10.3390/su151612451>

Karatas, E., & Yalin, H. I. (2021). The Impact of Matching Learning-Teaching Styles on Students' Academic Achievement. Eurasian Journal of Educational Research, 92, 377-402. <https://eric.ed.gov/?id=EJ1294107>

Khoa, B. T., Hung, B. P., & Hejsalem-Brahmi, M. (2023). Qualitative research in social sciences: data collection, data analysis and report writing. International Journal of Public Sector Performance Management, 12(1-2), 187-209.

Laksono, B. A., Hamdan, A., & Darusman, Y. (2023). Development of a Peer Teaching-Based Training Marketplace Platform To Improve Student Skills. Lembaran Ilmu Kependidikan, 52(2), 118-125. https://doi.org/10.15294/lik.v52i2.48006

Lee, H., Lee, S. H., & Quek, T. Q. (2022). Artificial intelligence meets autonomy in wireless networks: A distributed learning approach. IEEE Network, 36(6), 100-107. <https://doi.org/10.1109/MNET.105.2100450>

Niu, W., Zhang, W., Zhang, C., & Chen, X. (2024). The Role of Artificial Intelligence Autonomy in Higher Education: A Uses and Gratification Perspective. Sustainability, 16(3), 1276. <https://doi.org/10.3390/su16031276>

Nykonenko, A. (2023). The impact of artificial intelligence on modern education: prospects and challenges. Artificial Intelligence, 2, 10-15. <http://jnas.nbuv.gov.ua/j-pdf/II_2023_2_3.pdf>

Obionwu, V., Nürnberger, A., & Saake, G. (2022). A Skill Sharing Platform for Team Collaboration and Knowledge Exchange. In WEBIST (pp. 365-372). https://www.scitepress.org/Papers/2022/113521/113521.pdf

Rashid, A. B., & Karim, A. (2024). AI Revolutionizing Industries Worldwide: A Comprehensive Overview of Its Diverse Applications. *Hybrid Advances*, *7*, 100277–100277. https://doi.org/10.1016/j.hybadv.2024.100277

Saihi, A., Ben-Daya, M., Hariga, M., & As' ad, R. (2024). A Structural equation modelling analysis of generative AI Chabot’s adoption among students and educators in higher education. Computers and Education: Artificial Intelligence, 7, 100274. <https://doi.org/10.1016/j.caeai.2024.100274>

Salah, M., Abdel Fattah, F., Alhalbusi, H., & Al Mukhaini, M. (2023). Me and My AI Bot: Exploring the 'AIholic' Phenomenon and University Students' Dependency on Generative AI Chabot’s-Is This the New Academic Addiction? <https://doi.org/10.21203/rs.3.rs-3508563/v2>

Sofi-Karim, M., Bali, A. O., & Rached, K. (2023). Online education via media platforms and applications as an innovative teaching method. Education and Information Technologies, 28(1), 507-523. <https://link.springer.com/article/10.1007/s10639-022-11188-0>

Sullivan, M., Kelly, A., & McLaughlan, P. (2023). ChatGPT in higher education: Considerations for academic integrity and student learning. <https://doi.org/10.37074/jalt.2023.6.1.17>

Veldman, M. A., Doolaard, S., Bosker, R. J., & Snijders, T. A. B. (2020). Young children working together. Cooperative learning effects on group work of children in Grade 1 of primary education. Learning and instruction, 67, 101308. <https://doi.org/10.1016/j.learninstruc.2020.101308>

Vetter, M. A., Lucia, B., Jiang, J., & Othman, M. (2024). Towards a framework for local Interrogation of AI ethics: A case study on text generators, academic integrity, and composing with ChatGPT. Computers and Composition, 71, 102831. <https://doi.org/10.1016/j.compcom.2024.102831>

Xu, K., Li, Y., Liu, C., Liu, X., Hao, X., Gao, J., & Maropoulos, P. G. (2020). Advanced data collection and analysis in data-driven manufacturing process. Chinese Journal of Mechanical Engineering, 33, 1-21.

Zhai, C., Wibowo, S., & Li, L. D. (2024). The effects of over-reliance on AI dialogue systems on students' cognitive abilities: a systematic review. Smart Learning Environments, 11(1), 28. <https://link.springer.com/article/10.1186/s40561-024-00316-7>

Zunaidah, A., Wiharja, C. K., & Febriantono, M. A. (2023, August). Dependency on AI-Based Writing Tools in English Learning: Implications for Human-Computer Interaction. In 2023 International Conference on Information Management and Technology (ICIMTech) (pp. 1-6). IEEE. <https://doi.org/10.1109/ICIMTech59029.2023.10278054>

**‌Appendices**

## **Appendix A: Project Timeline**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Phase** | **Task** | **Duration** | **Start Date** | **End Date** |
| 1. Research Phase | Conduct literature review | 1 week | Week 1 | Week 1 |
|  | Identify user needs through surveys | 3 days | Week 1 | Week 1 (Day 5) |
|  | Analyse survey data | 2 days | Week 1 | Week 1 (Day 7) |
| 2. Planning Phase | Define system requirements | 3 days | Week 2 | Week 2 (Day 3) |
|  | Develop project plan and timeline | 2 days | Week 2 | Week 2 (Day 5) |
|  | Obtain ethical approvals | 2 days | Week 2 | Week 2 (Day 7) |
| 3. Design Phase | Create system architecture diagram | 3 days | Week 3 | Week 3 (Day 3) |
|  | Design user interface prototypes | 1 week | Week 3 | Week 3 |
| 4. Development Phase | Develop AI moderation tools | 2 weeks | Week 4 | Week 5 |
|  | Build networking and collaboration modules | 1 week | Week 5 | Week 5 |
|  | Integrate skill-building features | 1 week | Week 6 | Week 6 |
|  | Set up educator control panel | 3 days | Week 6 | Week 6 (Day 3) |
| 5. Testing Phase | Conduct unit testing on individual components | 1 week | Week 7 | Week 7 |
|  | Perform user acceptance testing | 1 week | Week 8 | Week 8 |
| 6. Implementation Phase | Launch system prototype | 1 week | Week 9 | Week 9 |
|  | Collect feedback from users | 3 days | Week 9 | Week 9 (Day 3) |
| 7. Finalization Phase | Revise system based on feedback | 1 week | Week 10 | Week 10 |
|  | Prepare final project report | 1 week | Week 11 | Week 11 |

## **Appendix 2: Hardware Requirements**

|  |  |  |
| --- | --- | --- |
| **Component** | **Minimum Requirement** | **Recommended Requirement** |
| Processor | Intel Core i5 | Intel Core i7 or better |
| RAM | 8 GB | 16 GB or higher |
| Storage | 256 GB SSD | 512 GB SSD or higher |
| Operating System | Windows 10/ Mac OS/Linux | Latest versions |
| Network | 10 Mbps | 50 Mbps or higher |

## **Appendix 3: Software Requirements**

|  |  |
| --- | --- |
| **Component** | **Details** |
| Backend Framework | Django (Python) |
| Frontend Framework | React.js |
| Database | MySQL |
| AI Tools | Google Gemini AI API |
| Server | AWS |
| Version Control | GitHub |

## **Appendix 4: Budget Estimation**

|  |  |  |
| --- | --- | --- |
| **Category** | **Details** | **Cost Estimate (KSH)** |
| Hardware | Laptop for development | 40000 |
|  | Server setup (AWS/Azure) | FREE |
| Software Licenses | Domain registration | 1000 |
|  | SSL certificate | 3000 |
|  | Google Gemini API | FREE |
| Human Resources | Developer stipend | 200 |
|  | Designer for UI/UX | 300 |
| Miscellaneous | Marketing/Testing costs | 1000 |
| Total Estimated Budget |  | **55500** |