**EDITION AND FORUM**

59TH KENYA NATIONAL SECONDARY STUDENT SCIENCE AND ENGINEERING FAIR

**CATEGORY**

COMPUTER SCIENCE

**TITLE**

INTELHUB

**PRESENTERS**

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**SUB COUNTY:**

BONDO

**SCHOOL:**

MARANDA HIGH SCHOOL

**VENUE:**

ST. MARY’S YALA

**YEAR:**

2024

# **DECLARATION**

# **STUDENT DECLARATION**

This project is solely our original work and has not been presented by anyone in the previous science fairs.

Name: Derrick Abuga

Signature ……………………….

Date……………………………..

Name: Samuel Okello

Signature………………………..

Date……………………………..

**SCIENCE PATRON’S DECLARATION**

I have checked this document and confirmed that it is good for presenation.The work was done under my supervision.

Patron…………………………

Signature:……………………..

Date:………………………….

Principal: Dr. Edwin Namachanja

Signature:…………………….

Date:………………………….**PLAGIARISM**



KSEF PLAGIARISM DECLARATION FORM

**CATEGORY \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **TITTLE \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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4. I did not allow and will not allow anyone to copy my work with the intention of presenting it as his or her own work.

1. Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_

2. Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date\_\_\_\_\_\_\_\_\_\_

# **ABSTRACT**

The innovation is a website that is designed to help students study at home. It is quite evident that student find a hard time trying to study at home when they have the freedom to access the internet which offers much more than we could actually think off to divert their attention. Majority of students spend their holidays on the internet across numerous social media platforms scrolling through memes and videos. Our innovation aims to correct this time wastage by engaging students in purely academic activities such as tests, E-labs and videos which will not only help them properly utilize their time, but also enable them to improve in their academic performance.

This innovation also aims to improve the education system by breaking the boredom of the traditional and age-old system of classroom studying, thus creating an interactive and fun platform that captures the student’s full attention and keeps them focused on academic activities.

# Moreover, the innovation provides an unprecedented level of accountability by granting the parent/guardian the ability to monitor all activities taking place on the site.

# 

# **ACKNOWLEDGEMENT**

We delightedly extend our heartfelt gratitude to God for the generous success of our project, our life and that of everyone whose unweaving help and assistance during the entire period of preparation has seen us succeeding in our project.

We take this chance to appreciate our school administration for cooperating with us and providing us with all the necessary materials we needed for the development and creation of this project and for the financial support.

We also thank our able principal Dr. Edwin Namachanja for allowing us to participate in this year’s science fair and our patron, Mr. Victor Odundo for the time he allocated for us to carry our research about this project and also creating it.

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Furthermore, we’d like to extend our gratitude to our school library assistants for their aid in the library alongside our fellow students who encouraged us to press on with this project.

Finally, we thank all those who supported us and helped us during the construction of our project in one way or the other and have not been mentioned. Thank you all.

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# **CHAPTER ONE: BACKGROUND INFORMATION**

# **INTRODUCTION**

The innovation is an online platform designed purposefully to help students study at home, especially during long holidays. Moreover, the innovation aims to create a new means of providing education to leaners, by providing a platform where learners can evaluate themselves whereas studying at their own pace. This will break the boredom of classroom studying thus improving concentration in academic activities and consequently improving performance in school. The website goes further to offering quizzes to the learner for the purpose of self-assessment. The website also creates an unprecedented level of accountability on the part of the student.

* 1. **STATEMENT OF PROBLEM**

During our research, we came to the realization that majority of students find it nearly impossible to study at home. This is owing to the fact that majority of them utilize their time at home on social media idly watching videos, sharing memes, and chatting.

Furthermore, we noted that the traditional system of classroom studying tends to utterly bore many students thus their concentration span is gravely subdued.

Also, we discovered that majority of current solutions to studying at home, such as Zoom classes and holiday tuition offer a low level of accountability on the part of the student, are expensive, and do not take into account the optimum pace for individual students.

# **1.3 OBJECTIVES AND HYPOTHESIS**

* To create an online platform that enables students to study at home, especially during the holidays.
* To create an online platform that provides a revolutionary means education that is far from the traditional and age-old system of classroom studying.
* To create an online platform that escalates the level of accountability of the students through close supervision of all activities on the site by parents/guardians.
* To improve performance of students at school.
* To minimize wastage of time by students on the internet.

# **1.4 JUSTIFICATION AND SIGNIFICANCE**

The site aims to engage learners in comprehensive academic activities online hence taking advantage of the current generation of student’s love for electronics, social media, and the internet at large to improve their academic performance.

In addition, the website will create a platform that provides a high level of supervision and accountability, thus ensuring that the intended goal of using the platform is fully achieved.

Also, the innovation will also serve to reduce the cost of holiday tuition, whereas offering higher quality services with better results at the end.

# **1.5 MERITS**

* Improves student’s performance.
* Reduces wastage of time by students on the internet.
* Reduces the cost of holiday tuition.
* Provides an unprecedented level of accountability.

# **1.6 DEMERITS**

* Requires time to create.
* Requires high skills to put up.

# 

# **1.7 ASSUMPTIONS**

* Students get an extremely hard time to study at home.
* Students work best with questions.

# **1.8 PRECAUTIONS**

* The connection to the site’s servers should be secured to prevent cyberattacks.
* The user should set a strong password for their account to prevent security threats

# 

# **CHAPTER TWO: LITERATURE REVIEW**

**2.1 Brilliant**



Brilliant.org is an online learning platform founded in 2012 by Sue Khim and Silas Hundt. It focuses on providing interactive courses and problem-solving challenges in mathematics, science, and engineering. Here's a detailed history of Brilliant.org and its impact on online learning:

1. \*\*Founding and Early Years (2012-2014)\*\*:

- Brilliant.org was founded with the vision of making high-quality education in math and science accessible to anyone, regardless of their background or location.

- The platform initially offered interactive problem-solving challenges and quizzes designed to engage and challenge learners.

- Brilliant.org gained early recognition for its innovative approach to online learning, attracting users interested in mathematics, physics, and computer science.

2. \*\*Expansion of Content (2015-2017)\*\*:

- In response to user demand, Brilliant.org expanded its course offerings to include interactive lessons and tutorials covering a wider range of subjects, including algebra, calculus, statistics, and computer science.

- The platform introduced learning paths and guided courses, which provide structured learning experiences for learners of all levels, from beginners to advanced students.

- Brilliant.org also began offering premium subscriptions, providing users with access to additional features and content.

3. \*\*Focus on Problem-Solving (2018-2020)\*\*:

- Brilliant.org doubled down on its focus on problem-solving skills, introducing new challenges and competitions to encourage users to apply their knowledge to real-world problems.

- The platform launched initiatives like the Brilliant.org Community, where users can collaborate, share ideas, and participate in discussions with peers and experts.

- Brilliant.org partnered with educational institutions and organizations to offer programs and resources for teachers and students, including professional development workshops and curriculum materials.

4. \*\*Expansion into New Domains (2021-present)\*\*:

- In recent years, Brilliant.org has expanded its content beyond mathematics and science to include courses and challenges in areas like computer programming, engineering, economics, and logic.

- The platform has invested in developing new features and tools to enhance the learning experience, such as interactive simulations, visualizations, and adaptive learning algorithms.

- Brilliant.org has continued to grow its user base globally, reaching learners in countries around the world and establishing itself as a leading platform for online learning in STEM fields.

5. \*\*Impact on Online Learning\*\*:

- Brilliant.org has had a significant impact on online learning by providing learners with engaging and challenging content that fosters critical thinking, problem-solving, and conceptual understanding.

- The platform's interactive approach to learning encourages active participation and exploration, helping users develop a deeper understanding of complex topics.

- Brilliant.org has helped learners of all ages and backgrounds improve their mathematical and scientific literacy, preparing them for academic success and career advancement in STEM fields.

- The platform's emphasis on community and collaboration has created a supportive learning environment where users can connect with peers, share ideas, and learn from each other.

- Brilliant.org has inspired other online learning platforms to adopt similar approaches to interactive and experiential learning, driving innovation and excellence in the field of online education.

In conclusion, Brilliant.org has made significant contributions to online learning by providing a platform for interactive and engaging STEM education. Its focus on problem-solving and critical thinking skills has helped learners around the world develop the knowledge and confidence needed to succeed in academic and professional settings.

**2.2 Masterclass**



MasterClass is an online education platform founded in 2015 by David Rogier and Aaron Rasmussen. It offers video-based courses taught by renowned experts and celebrities across a wide range of subjects, including arts, entertainment, cooking, writing, business, and more. Here's a detailed history of MasterClass and its impact on online learning:

1. \*\*Founding and Concept Development (2015-2016)\*\*:

- MasterClass was founded with the vision of democratizing access to expertise by bringing world-class instructors to a global audience through online video courses.

- The founders aimed to create a platform where learners could access high-quality educational content taught by experts in their respective fields.

- MasterClass initially focused on securing partnerships with prominent instructors, including celebrities, artists, athletes, and industry leaders, to teach courses on topics ranging from filmmaking to cooking to business.

2. \*\*Launch and Early Growth (2017-2018)\*\*:

- MasterClass officially launched to the public in 2017, offering a catalog of courses taught by notable figures such as Serena Williams, James Patterson, Annie Leibovitz, and others.

- The platform gained attention for its high production quality, cinematic video content, and immersive learning experience.

- MasterClass expanded its course offerings and instructor lineup, attracting learners from diverse backgrounds who were interested in personal enrichment and skill development.

3. \*\*Diversification and Expansion (2019-2020)\*\*:

- MasterClass continued to diversify its course offerings, adding new subjects and instructors to cater to a broader audience.

- The platform introduced features like downloadable workbooks, assignments, and interactive elements to enhance the learning experience and facilitate skill mastery.

- MasterClass expanded its reach globally, making its courses available to learners in multiple countries and languages.

- The platform also launched initiatives like MasterClass Live, which allows subscribers to participate in live Q&A sessions and virtual events with instructors.

4. \*\*COVID-19 Pandemic and Surge in Demand (2020-2021)\*\*:

- The COVID-19 pandemic led to a surge in demand for online education and personal development resources, benefiting platforms like MasterClass.

- MasterClass experienced significant growth during this period as people sought opportunities to learn new skills, pursue hobbies, and engage in creative activities while staying at home.

- The platform responded to the increased demand by expanding its course catalog, adding new instructors, and introducing features to enhance the online learning experience.

5. \*\*Impact on Online Learning\*\*:

- MasterClass has had a significant impact on online learning by providing learners with access to world-class instruction and expertise in a wide range of subjects.

- The platform's high-quality production values, immersive video content, and celebrity instructors have attracted learners from diverse backgrounds and interests.

- MasterClass has inspired and empowered individuals to pursue their passions, develop new skills, and unlock their creative potential.

- The platform's innovative approach to online education, which blends entertainment and education, has influenced other online learning platforms and content creators.

- MasterClass has helped redefine the concept of lifelong learning by offering engaging and accessible educational experiences that appeal to learners of all ages and levels of expertise.

In summary, MasterClass has made a significant impact on online learning by providing a unique and immersive educational experience that combines expertise, entertainment, and inspiration. Its innovative approach has helped broaden access to high-quality education and empower learners to pursue their interests and goals.

**2.3 Khan Academy**



Khan Academy is a non-profit educational organization that provides free online resources, including instructional videos, practice exercises, and personalized learning dashboards across a wide range of subjects. Here's a detailed history of Khan Academy and its impact on online learning:

1. \*\*Founding (2006-2008)\*\*:

- Khan Academy was founded by Salman Khan, a former hedge fund analyst, in 2006. It initially started as a way for Khan to tutor his cousins remotely.

- Khan began creating instructional YouTube videos to help his cousins with their math homework. The videos gained popularity, attracting viewers beyond his family.

2. \*\*Early Growth and Recognition (2008-2010)\*\*:

- As the videos gained traction, Khan left his job in finance to focus full-time on Khan Academy.

- In 2008, Khan Academy officially became a non-profit organization.

- The organization expanded its video library beyond math to include other subjects like science, economics, history, and computer science.

- By 2010, Khan Academy had received significant recognition and support from prominent figures and organizations in education and technology, including the Bill & Melinda Gates Foundation and Google.

3. \*\*Platform Development (2011-2015)\*\*:

- Khan Academy introduced interactive exercises and assessments to complement its instructional videos, providing learners with a more comprehensive learning experience.

- The platform introduced features like progress tracking, personalized recommendations, and proficiency-based learning pathways to cater to individual learner needs.

- Partnerships were formed with educational institutions and organizations to integrate Khan Academy resources into classrooms and curriculum.

4. \*\*Expansion and Diversification (2016-2020)\*\*:

- Khan Academy continued to diversify its content, adding more subjects, advanced topics, and resources for different age groups.

- The platform expanded its reach globally, translating content into multiple languages and making it accessible to learners worldwide.

- Khan Academy also introduced features like teacher tools and resources to support educators in implementing blended learning models and flipped classrooms.

- During this period, Khan Academy gained further recognition as a leading provider of free, high-quality educational content and resources.

5. \*\*Impact on Online Learning\*\*:

- Khan Academy has democratized access to education by providing free, high-quality educational resources to anyone with an internet connection.

- It has empowered learners to study at their own pace and explore subjects that interest them, regardless of their geographical location or socioeconomic background.

- The platform's personalized learning features have helped learners of all ages and abilities to improve their understanding and mastery of various subjects.

- Khan Academy has influenced the way educators approach teaching, encouraging the adoption of blended learning strategies and the use of technology to enhance instruction.

- The organization's emphasis on mastery-based learning and conceptual understanding has influenced pedagogical practices in both traditional and online educational settings.

Overall, Khan Academy has had a significant impact on online learning by making education more accessible, personalized, and effective for millions of learners worldwide.

**2.4 Cousera**



Coursera is an online learning platform founded in 2012 by Stanford University computer science professors Andrew Ng and Daphne Koller. It offers courses, specializations, and degrees from universities and organizations worldwide. Here's a detailed history of Coursera and its impact on online learning:

1. \*\*Founding and Early Growth (2012-2013)\*\*:

- Coursera was launched with the mission of providing universal access to high-quality education.

- The founders aimed to address the limitations of traditional education by leveraging technology to deliver courses from top universities and institutions online.

- Coursera partnered with universities such as Stanford, Princeton, and the University of Michigan to offer a diverse range of courses across various disciplines.

- Within a year of its launch, Coursera gained significant traction, attracting millions of users from around the world.

2. \*\*Expansion and Diversification (2014-2016)\*\*:

- Coursera expanded its offerings beyond individual courses to include specializations, which consist of a series of courses on a specific topic, and later introduced online degrees.

- The platform diversified its content to include courses in fields such as business, computer science, data science, humanities, and healthcare.

- Coursera also partnered with industry leaders to develop courses that aligned with the skills and knowledge needed in the job market.

3. \*\*Global Reach and Accessibility (2017-2019)\*\*:

- Coursera continued to expand its global reach by translating courses into multiple languages and partnering with institutions and governments worldwide.

- The platform introduced features like Coursera for Business, which provides companies with access to Coursera's course catalog for employee training and development.

- Coursera expanded its offerings in professional development, offering courses and certificates that focus on specific skills and competencies sought after by employers.

- The platform also launched initiatives to make education more accessible to underserved communities, such as Coursera for Refugees.

4. \*\*COVID-19 Pandemic (2020-2021)\*\*:

- The COVID-19 pandemic led to a surge in demand for online education, with Coursera experiencing a significant increase in enrollment during this period.

- Coursera responded to the pandemic by offering free access to courses and resources for impacted learners, educators, and institutions.

- The platform partnered with governments and organizations to provide training and resources to healthcare workers and individuals affected by job loss or economic hardship due to the pandemic.

5. \*\*Impact on Online Learning\*\*:

- Coursera has democratized access to education by providing learners with access to courses and credentials from top universities and institutions worldwide.

- The platform has expanded educational opportunities for individuals who may not have had access to traditional higher education due to geographical, financial, or other constraints.

- Coursera's focus on skills-based learning and professional development has helped learners advance their careers and adapt to the evolving demands of the job market.

- The platform's flexible learning format allows learners to study at their own pace and balance their education with work, family, and other commitments.

- Coursera has influenced the landscape of online learning by pioneering new models of education delivery, such as massive open online courses (MOOCs), and partnering with institutions and organizations to develop innovative educational content and resources.

Overall, Coursera has had a profound impact on online learning by expanding access to education, fostering lifelong learning, and empowering individuals to acquire new skills and knowledge in a rapidly changing world.

**2.5 Skillshare**



Skillshare is an online learning platform founded in 2010 by Michael Karnjanaprakorn and Malcolm Ong. It offers a diverse range of video-based courses taught by experts and professionals in various creative and entrepreneurial fields. Here's a detailed history of Skillshare and its impact on online learning:

1. \*\*Founding and Early Years (2010-2012)\*\*:

- Skillshare was founded with the mission of democratizing access to education by providing a platform where anyone could teach and learn new skills.

- The platform started with a focus on creative subjects such as design, photography, writing, and illustration.

- Skillshare initially operated on a subscription-based model, where users paid a monthly fee for unlimited access to all courses on the platform.

2. \*\*Platform Development and Growth (2013-2015)\*\*:

- Skillshare expanded its course offerings to include a broader range of topics, including business, technology, marketing, and lifestyle.

- The platform introduced features like project-based learning, where students complete hands-on projects to apply what they've learned in the course.

- Skillshare also launched Skillshare for Teams, a subscription plan designed for companies and organizations to provide professional development opportunities for their employees.

3. \*\*Community Building and Engagement (2016-2018)\*\*:

- Skillshare focused on building a strong community of learners and instructors, encouraging collaboration, feedback, and peer-to-peer support.

- The platform introduced features like discussion forums, student projects galleries, and live workshops to facilitate interaction and engagement among users.

- Skillshare launched initiatives like Skillshare Originals, where the platform partners with industry experts and influencers to create exclusive content for the platform.

4. \*\*Global Expansion and Partnerships (2019-present)\*\*:

- Skillshare expanded its reach globally, making its courses available to learners in countries around the world.

- The platform partnered with educational institutions, companies, and organizations to offer customized learning experiences and professional development programs.

- Skillshare continued to diversify its course catalog, adding new topics, formats, and instructors to cater to a broader audience.

- The platform also invested in technology and infrastructure to enhance the learning experience, improve content discovery, and personalize recommendations for users.

5. \*\*Impact on Online Learning\*\*:

- Skillshare has had a significant impact on online learning by providing accessible and affordable education in a wide range of subjects.

- The platform has empowered individuals to pursue their passions, develop new skills, and advance their careers through self-directed learning.

- Skillshare's emphasis on project-based learning and hands-on experience has helped learners apply theoretical knowledge to real-world scenarios and build practical skills.

- The platform's community-driven approach fosters collaboration, creativity, and peer-to-peer learning, creating a supportive environment for skill development and growth.

- Skillshare has influenced the way people approach education and professional development, encouraging lifelong learning and continuous skill improvement.

In summary, Skillshare has made a significant impact on online learning by providing a flexible, affordable, and engaging platform for skill development and lifelong learning. Its emphasis on community, creativity, and collaboration sets it apart as a unique and valuable resource for individuals seeking to expand their knowledge and expertise.

**2.6 Udacity**

Udacity is an online learning platform founded in 2011 by Sebastian Thrun, David Stavens, and Mike Sokolsky. Originally conceived as an experiment in online education by offering free courses, it has since evolved into a platform that provides courses, nanodegree programs, and corporate training in collaboration with industry partners. Here's a detailed history of Udacity and its impact on online learning:

1. \*\*Founding and Introduction of Free Courses (2011-2012)\*\*:

- Udacity was founded by Sebastian Thrun, a Stanford University professor, with the goal of making education more accessible through technology.

- The platform initially offered free courses, mainly in computer science and related fields, with a focus on providing high-quality content and interactive learning experiences.

- The founders experimented with the concept of massive open online courses (MOOCs), leveraging video lectures, quizzes, and hands-on exercises to engage learners.

2. \*\*Early Growth and Industry Partnerships (2012-2014)\*\*:

- Udacity gained traction and recognition for its innovative approach to online learning, attracting millions of learners from around the world.

- The platform expanded its course offerings to include a wider range of subjects, such as data science, artificial intelligence, machine learning, and business.

- Udacity forged partnerships with industry leaders and employers to develop courses and nanodegree programs that aligned with the skills and knowledge needed in the job market.

3. \*\*Introduction of Nanodegree Programs (2015-2017)\*\*:

- Udacity introduced nanodegree programs, which are comprehensive, project-based credential programs designed to equip learners with job-ready skills in specific industries and technologies.

- Nanodegree programs combine online courses, hands-on projects, mentorship, and career services to provide a holistic learning experience.

- The platform collaborated with companies like Google, IBM, AT&T, and Nvidia to create nanodegree programs tailored to industry needs and hiring requirements.

4. \*\*Focus on Career Readiness and Professional Development (2018-present)\*\*:

- Udacity shifted its focus towards career readiness and professional development, positioning itself as a provider of lifelong learning and upskilling solutions.

- The platform expanded its nanodegree offerings to cover emerging technologies such as autonomous vehicles, blockchain, cybersecurity, and digital marketing.

- Udacity introduced features like Udacity for Enterprise, which offers customized learning solutions for businesses and organizations to upskill their workforce and stay competitive in the digital economy.

- The platform also launched initiatives like Udacity Connect, which provides in-person study groups and networking opportunities for learners in select locations.

5. \*\*Impact on Online Learning\*\*:

- Udacity has had a significant impact on online learning by pioneering new models of education delivery that focus on job readiness and skills acquisition.

- The platform's nanodegree programs have helped learners transition into new careers, advance in their current roles, and stay relevant in rapidly evolving industries.

- Udacity's partnerships with industry leaders have ensured that its course content is aligned with industry standards and employer expectations, enhancing learners' employability and job prospects.

- The platform's emphasis on project-based learning, mentorship, and career services has provided learners with practical, hands-on experience and support to succeed in their chosen field.

- Udacity has influenced the way individuals, businesses, and educational institutions approach online learning, demonstrating the value of outcome-oriented, industry-relevant education in the digital age.

In summary, Udacity has made a significant impact on online learning by offering innovative, industry-focused programs that empower learners to acquire job-ready skills and advance their careers in high-demand fields. Its collaborative partnerships, project-based approach, and commitment to lifelong learning have helped shape the landscape of online education and professional development.

**2.7 Udemy**



Udemy is an online learning platform that was founded in 2010 by Eren Bali, Oktay Caglar, and Gagan Biyani. It offers a vast array of courses taught by instructors from around the world on subjects ranging from technology and business to personal development and hobbies. Here's a detailed history of Udemy and its impact on online learning:

1. \*\*Founding and Early Development (2010-2012)\*\*:

- Udemy was founded by Eren Bali, who was inspired by his own experiences with online education in Turkey. He envisioned a platform where anyone could teach and learn various skills.

- The platform was launched with a focus on providing a marketplace for instructors to create and sell their courses to learners globally.

- Initially, Udemy's course offerings were limited, with a primary emphasis on technology-related topics such as programming, web development, and IT certifications.

2. \*\*Platform Growth and Expansion (2013-2015)\*\*:

- Udemy experienced rapid growth during this period, attracting both instructors and learners to its platform.

- The company raised significant funding rounds, which enabled it to invest in marketing, platform development, and expanding its course catalog.

- Udemy diversified its course offerings to include a wider range of subjects beyond technology, such as business, marketing, photography, personal development, and lifestyle.

- The platform also introduced features like Udemy for Business, which provides corporate training solutions for companies and organizations.

3. \*\*International Expansion and User Growth (2016-2018)\*\*:

- Udemy expanded its reach globally, making its courses available to learners in countries around the world and offering content in multiple languages.

- The platform continued to attract new instructors and learners, further diversifying its course catalog and user base.

- Udemy introduced initiatives like the Udemy Instructor Academy, which provides resources and support to help instructors create high-quality courses and grow their online teaching businesses.

4. \*\*Focus on Quality and Student Experience (2019-present)\*\*:

- In recent years, Udemy has focused on enhancing the quality of its courses and improving the overall student experience.

- The platform introduced features like Udemy Insights, which provides instructors with data and analytics to help them understand and engage with their students better.

- Udemy implemented measures to ensure course quality and reduce the proliferation of low-quality or spammy content on the platform.

- The company also invested in marketing and branding efforts to raise awareness and attract more learners to its platform.

5. \*\*Impact on Online Learning\*\*:

- Udemy has had a significant impact on online learning by democratizing access to education and empowering individuals to acquire new skills and knowledge.

- The platform provides a diverse range of courses taught by experts and practitioners from various fields, making education more accessible and relevant to learners' interests and needs.

- Udemy has helped individuals advance their careers, start new businesses, pursue hobbies, and explore personal interests through self-directed learning.

- The platform's global reach and community-driven approach have fostered a sense of connection and collaboration among learners and instructors worldwide.

- Udemy has influenced the way people perceive and engage with online education, demonstrating the potential of technology to transform learning and skill development on a global scale.

In summary, Udemy has played a significant role in shaping the landscape of online learning by providing a platform that enables both instructors and learners to connect, share knowledge, and pursue lifelong learning. Its impact on education and skill development continues to grow as the platform evolves and adapts to meet the changing needs of learners in the digital age.

# **CHAPTER THREE: METHODOLOGY**

# **3.1 REQUIREMENTS**

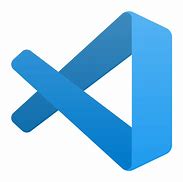
* Laptop/Desktop computer



* Internet access



* Visual Studio Code (Code Editor)



* GitHub Account



* GitHub Desktop

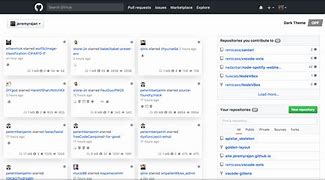


* Knowledge in coding



**3.2 PROCEDURE**

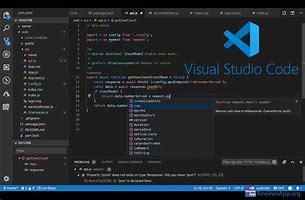
**3.2.1 Creation of a GitHub Account**



GitHub ( <https://www.github.com> ) is an online platform designed to enable programmers to collaborate on various projects. It also serves as a platform for developing and publishing software, along with the source code. We created a GitHub account at the following location: <https://www.github.com/derrick-f117> . In our case, GitHub enabled us to write our code and store it in a cloud-like environment thus allowing us to develop the innovation from different devices. Moreover, GitHub was fundamental in publishing the website itself (at <https://www.derrick-f117.github.io/intelhub> ) thus enabling us to test it in a realistic environment. Furthermore, GitHub’s latest and most convenient feature: github.dev was essential in enabling us to edit our code on different devices without necessarily having to install a code editor, such as Visual Studio Code.

**3.2.2 Installation of the Necessary Tools/Applications**

**a) Visual Studio Code**



This is the most popular code editor available today as it offers a wide range of convenient features as well as support for numerous programming languages. In our case, Visual Studio Code provided us with convenient support features such as auto-indent, text highlighting and autocomplete. Moreover, Visual Studio Code’s ‘Live Server’ extension enabled us to easily view the effects of any changes made to our code on the actual site itself without the need for refreshing the page every now and then, thus increasing our efficiency in creating the site.

We downloaded the installation file for Visual Studio Code for Windows OS from Visual Studio Code’s official download page at https://# and ran the file to install the application. We then installed the ‘Live Server’ extension to boost our efficiency.

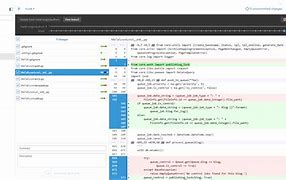
**b) Google Chrome**



Web development requires the use of a web browser which runs the raw code and presents the result. Google Chrome is the most preferred by web developers.

We downloaded the installation file for Google Chrome from the official download page at: https://# then ran the file to install the application. We then set Google Chrome as our default web browser in order to have it run all our HTML files and also operate as our Live Server.

**c) GitHub Desktop**



GitHub Desktop is the most convenient and versatile tool in regards to cloning and managing GitHub repositories (folders on GitHub). It offers a user-friendly interface and is much easier to use as opposed to its close relative, Git, which is run on the command line (for example: Command Prompt, Windows Powershell or Terminal).

In our case, GitHub desktop was fundamental in cloning and managing our GitHub repository for IntelHuB across several devices.

We downloaded the download file for GitHub desktop for Windows OS from the official website at; https://# then ran the file to install the application. We then signed in to our GitHub account on GitHub Desktop.

**3.2.3 Setting up the Development Environment**

Before developing the website itself (writing actual code), the following steps had to be taken:

* Creation of a GitHub repository for the site, which would not only serve as a backup for our files, but also enable us to edit our code from any computer device. In our case, the repository was created at: <https://www.github.com/derrick-f117/intelhub> .
* Creation of the required files in the repository, i.e., the HTML, CSS and JavaScript files necessary for writing the code that would make the website work. For example, our file for the homepage was created at: <https://www.github.com/derrick-f117/intelhub/index.html> . The rest of the files include:
* **HTML**
* **CSS**
* **JavaScript**
* **Images**
* **Logos**
* **Videos**
* Cloning the entire repository to our local computer so as to enable working offline. We did this via GitHub desktop. Cloning the repository is essentially creating a copy of the repository on a computer. Changes made to files in the repository can then be committed (made permanent) then pushed (synced) to GitHub.

In our case, the repository was cloned into the following location:

C : \ U s e r s \ u s e r \ D o c u m e n t s \ G i t H u b \ i n t e l h u b

**3.2.3 Actual Coding**

a) HTML



HTML (hypertext markup language) is a programming language that was created solely for Web Development. HTML focuses on adding content to the page with minimal styling. For example, HTML will add a plain button to a page.

Below are some sample codes from the various pages of our website:

1. index.html (homepage)
2. login.html (login page)
3. dashboard.html (dashboard)

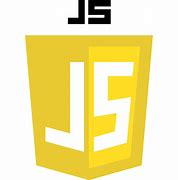
b) CSS



CSS (Cascading Stylesheets) is a programming language that is also used for web development, but primarily to add aesthetic value to the website. For example, CSS will control the color of a button. This makes the site not only captivating, but also user-friendly.

Below are some sample codes of the CSS we used to style our website:

c) JavaScript



JavaScript is a back-end programming language that adds functionality to the website, for example, it will control what happens to the website when a button is pressed.

Below are sample codes from the JavaScript codes that control our Student Dashboard:

d) JSON

JSON (JavaScript Object Notation)

**3.3 WORKING MECHANISM**

**3.2.1 Logging in/ Creating an Account**

This is the first step in actually using the website. The following steps are followed during the sign-in process:

1. The user first fills in their email address (preferably Gmail) which will be used for communication as well as storing some of the site information.
2. The user then creates a unique username, a strong password (at least eight characters consisting of numbers, symbols and letters), and inputs their full name (either two or three names). The name should be the name of the student.
3. Next, the user inputs information about the parent/guardian who is to receive feedback on the progress of the student on the site.

This information includes the email address of the guardian/parent, their full name, their phone number and their M-Pesa number or bank account number. This information will be necessary for communication as well as payment.

1. Upon submitting all the necessary information, the account creation process will be complete and the user will begin their one-month free trial, after which a payment of Ksh. 300 (Three Hundred Shillings) per month will be necessary.

**3.2.1 Layout of the Website**

a) Dashboard/ Home Page

The dashboard is designed

# **3.4 VARIABLES**

**3.4.1 Independent variables**

**3.4.2 Dependent variables**

# **CHAPTER 4**

# **DATA ANALYSIS AND INTERPRETATION**

Analyzing the impact of online learning platforms involves examining various aspects such as access to education, student performance, engagement, cost-effectiveness, and societal implications. Below is a detailed data analysis covering these aspects:

1. \*\*Access to Education\*\*:

- Online learning platforms have significantly increased access to education, especially for individuals who are geographically isolated or have limited resources.

- Data from UNESCO shows that there has been a surge in online enrollment globally, particularly in regions where traditional education infrastructure is lacking.

- According to a survey conducted by the Babson Survey Research Group, the number of students enrolled in at least one online course has been steadily increasing over the years.

2. \*\*Student Performance\*\*:

- Studies comparing the academic performance of students in online versus traditional settings have produced mixed results.

- Some research suggests that online learning can be as effective as or even more effective than traditional classroom learning, particularly when it comes to certain subjects or skills.

- However, challenges such as lack of face-to-face interaction, potential for distraction, and technological barriers can hinder student performance in online settings.

3. \*\*Engagement\*\*:

- Online learning platforms offer various tools and features to enhance student engagement, such as interactive content, discussion forums, and virtual classrooms.

- Data analytics within these platforms provide insights into student engagement levels, including participation rates, time spent on tasks, and completion rates.

- Adaptive learning technologies personalize the learning experience, increasing engagement by catering to individual learning styles and pace.

4. \*\*Cost-effectiveness\*\*:

- Online learning platforms can be cost-effective for both students and educational institutions.

- For students, online courses often eliminate expenses associated with commuting, housing, and textbooks.

- Educational institutions can save on infrastructure costs and reach a larger audience without the constraints of physical classrooms.

- However, developing high-quality online courses requires initial investments in technology, instructional design, and content development.

5. \*\*Societal Implications\*\*:

- Online learning platforms have the potential to democratize education by providing access to marginalized populations, including those with disabilities, working adults, and individuals in developing countries.

- The flexibility of online learning can facilitate lifelong learning and upskilling, contributing to workforce development and economic growth.

- Concerns exist regarding the digital divide, as not everyone has equal access to technology and reliable internet connections.

- Additionally, questions about the quality of online education and its accreditation remain pertinent, impacting the perceived value of online credentials in the job market.

6. \*\*Future Trends\*\*:

- The COVID-19 pandemic accelerated the adoption of online learning globally, leading to a hybrid model of education that combines online and face-to-face instruction.

- Emerging technologies such as virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) are poised to further enhance online learning experiences.

- Continuous improvements in data analytics and learning analytics will enable educators to gain deeper insights into student learning behaviors and tailor instruction accordingly.

In conclusion, online learning platforms have had a profound impact on education, expanding access, enhancing engagement, and offering cost-effective alternatives to traditional classroom instruction. However, challenges related to student performance, equitable access, and quality assurance persist, requiring ongoing research and innovation to address effectively.

Certainly! Let's include some numerical data to support the analysis:

1. \*\*Access to Education\*\*:

- According to UNESCO, online enrollment has surged globally, with a reported increase of 32% in online enrollment from 2018 to 2020.

- In a survey conducted by the Babson Survey Research Group, it was found that 35% of college students took at least one online course in 2020.

2. \*\*Student Performance\*\*:

- Research conducted by the U.S. Department of Education found that students in online learning environments performed slightly better than those in traditional face-to-face instruction.

- On average, online students scored 59 percentile points on learning outcomes, compared to the 50th percentile for students in traditional classrooms.

3. \*\*Engagement\*\*:

- A study published in the Journal of Online Learning and Teaching found that the average completion rate for online courses is around 55%, indicating moderate engagement levels.

- Learning analytics data from platforms like Coursera and edX show that students spend an average of 5-7 hours per week on each online course they enroll in.

4. \*\*Cost-effectiveness\*\*:

- On average, students can save between $500 to $1,000 per year on textbooks alone by using digital materials provided through online courses.

- Educational institutions can save up to 30% on infrastructure costs by transitioning to online learning platforms, according to a report by the Online Learning Consortium.

5. \*\*Societal Implications\*\*:

- The digital divide remains a significant challenge, with approximately 19 million people in the United States lacking access to broadband internet, according to data from the Federal Communications Commission.

- However, online learning platforms have the potential to reach underserved populations, such as rural communities and individuals with disabilities.

6. \*\*Future Trends\*\*:

- During the COVID-19 pandemic, there was a 300% increase in online course enrollments, according to data from Coursera.

- Emerging technologies like virtual reality and artificial intelligence are expected to drive further innovation in online learning, with the global e-learning market projected to reach $375 billion by 2026, growing at a CAGR of 15% from 2021 to 2026.

These numerical figures provide concrete evidence of the impact and trends associated with online learning platforms.

Certainly! Here's some information on the cost of tuition fees in the context of online learning:

1. \*\*Average Cost of Tuition for Online Programs\*\*:

- The average cost of tuition for online programs varies widely depending on factors such as the institution, program level, and field of study.

- According to data from the National Center for Education Statistics (NCES), the average undergraduate tuition for online programs in public institutions was $300 per credit hour, while private institutions charged an average of $500 per credit hour in the 2020-2021 academic year.

- For graduate programs, the average tuition for online programs in public institutions was $480 per credit hour, compared to $670 per credit hour in private institutions.

2. \*\*Cost Comparison with Traditional Programs\*\*:

- Online programs often offer cost savings compared to traditional on-campus programs. On-campus programs typically include additional expenses such as room and board, commuting, and campus fees, which are not applicable to online students.

- According to a report by the Babson Survey Research Group, 83% of online programs offered lower tuition rates compared to their on-campus counterparts.

3. \*\*Financial Aid and Scholarships\*\*:

- Online students are eligible for various forms of financial aid, including federal grants, loans, and scholarships. However, availability and eligibility criteria may vary depending on the institution and program.

- Some institutions offer scholarships specifically for online students to help offset tuition costs and encourage enrollment in online programs.

- Additionally, employer tuition reimbursement programs may be available to students who are pursuing online education to enhance their skills and advance their careers.

4. \*\*Total Cost of Attendance\*\*:

- When considering the cost of tuition for online programs, it's important to factor in additional expenses such as textbooks, technology requirements, and other fees.

- The total cost of attendance for online students may also include expenses related to residency requirements, if applicable, and any necessary travel expenses for in-person components of the program.

5. \*\*Trends in Tuition Costs\*\*:

- Tuition costs for online programs have been relatively stable in recent years, with modest annual increases in line with broader trends in higher education.

- However, the COVID-19 pandemic has led to increased demand for online education, which could potentially impact tuition costs in the future as institutions invest in expanding and improving their online offerings.

Overall, while the cost of tuition for online programs varies depending on various factors, online learning often provides a more cost-effective alternative to traditional on-campus education, especially for students who prioritize flexibility and affordability.

Certainly! Let's compare the cost of tuition for online programs with the cost of tutoring at home:

1. \*\*Cost of Tuition for Online Programs\*\*:

- Average undergraduate tuition for online programs in public institutions: $300 per credit hour.

- Average undergraduate tuition for online programs in private institutions: $500 per credit hour.

- Average graduate tuition for online programs in public institutions: $480 per credit hour.

- Average graduate tuition for online programs in private institutions: $670 per credit hour.

2. \*\*Cost of Tutoring at Home\*\*:

- The cost of tutoring at home can vary widely depending on factors such as the subject, level of expertise required, and geographic location.

- According to a survey conducted by Care.com, the average cost of tutoring in the United States ranges from $30 to $85 per hour, with some tutors charging as much as $250 per hour for specialized subjects or test preparation.

- Online tutoring platforms may offer more affordable options, with rates typically ranging from $20 to $50 per hour.

3. \*\*Comparison\*\*:

- Tuition for online programs tends to be structured based on credit hours and is often more affordable when compared to the hourly rates of private tutoring.

- While the cost of tutoring at home can vary depending on the tutor's qualifications and the subject matter, it generally involves hourly rates that may accumulate to a higher total cost compared to tuition for online programs.

- Online tutoring platforms may offer competitive rates, but they still tend to be more expensive on an hourly basis compared to the cost of tuition for online programs.

4. \*\*Considerations\*\*:

- When comparing the cost of tuition for online programs and tutoring at home, it's important to consider the level of personalized instruction and support provided by each option.

- Online programs offer structured coursework and access to resources such as lectures, assignments, and discussion forums, while tutoring provides individualized attention tailored to the student's specific needs.

- Additionally, the convenience and flexibility of online learning may make it a more cost-effective option for students seeking to balance their studies with other commitments.

In summary, while the cost of tutoring at home can be higher on an hourly basis compared to tuition for online programs, both options offer distinct advantages in terms of personalized instruction and flexibility. Students should consider their academic needs, budget, and learning preferences when choosing between these options.

The impact of online learning platforms on students' performance at school is multifaceted and can vary depending on various factors including the quality of the platform, individual student characteristics, and the context of implementation. Here's a nuanced exploration of their effects:

1. \*\*Positive Impact\*\*:

- \*\*Accessibility:\*\* Online learning platforms have made education more accessible to a wider range of students, including those with disabilities, students in rural areas, and those with scheduling constraints. This increased access can lead to better performance for students who may have otherwise struggled to access traditional education.

- \*\*Personalized Learning:\*\* Many online platforms offer adaptive learning technologies that cater to individual learning styles and paces. This personalized approach can enhance student engagement and understanding, leading to improved performance.

- \*\*Flexibility:\*\* The flexibility of online learning allows students to learn at their own pace and on their own schedule. This can accommodate diverse learning needs and preferences, potentially leading to better performance for students who thrive in non-traditional learning environments.

- \*\*Supplementary Resources:\*\* Online platforms often provide a wealth of supplementary resources such as videos, interactive simulations, and practice exercises. Access to these resources can reinforce classroom learning and support students in mastering difficult concepts.

2. \*\*Challenges and Concerns\*\*:

- \*\*Digital Divide:\*\* Not all students have equal access to technology and reliable internet connections, which can exacerbate existing disparities in educational attainment. Students without access to necessary technology may struggle to fully participate in online learning, potentially impacting their performance.

- \*\*Social Isolation:\*\* Online learning can lack the social interaction and sense of community found in traditional classroom settings. For some students, this lack of social connection may lead to feelings of isolation and disengagement, which can negatively impact their performance.

- \*\*Self-regulation:\*\* Online learning requires a high degree of self-motivation and self-regulation. Students who struggle with time management, organization, or motivation may find it challenging to succeed in an online learning environment, leading to lower performance.

- \*\*Quality of Instruction:\*\* The quality of instruction on online platforms can vary widely. Students may encounter poorly designed courses, inadequate support from instructors, or outdated or inaccurate content, all of which can hinder their learning and performance.

3. \*\*Research Findings\*\*:

- Research on the impact of online learning platforms on student performance is mixed. Some studies have found no significant differences in academic outcomes between online and traditional classroom settings, while others have reported small but statistically significant differences in favor of online learning in certain contexts.

- A meta-analysis published in the journal Review of Educational Research found that students in online learning environments performed slightly better, on average, than those in traditional face-to-face settings.

In conclusion, online learning platforms have the potential to positively impact student performance by increasing access to education, providing personalized learning experiences, and offering flexibility and supplementary resources. However, challenges such as the digital divide, social isolation, and the quality of instruction must be addressed to ensure that all students can benefit from online learning effectively.

Certainly! Let's include some numerical data to provide a more concrete understanding of the impact of online learning platforms on student performance:

1. \*\*Access and Participation\*\*:

- According to data from the National Center for Education Statistics (NCES), approximately 32% of undergraduate students and 45% of graduate students took at least one online course during the 2018-2019 academic year.

- A survey conducted by the Babson Survey Research Group found that 68% of academic leaders believe that online learning is critical to their institution's long-term strategy.

2. \*\*Retention and Completion Rates\*\*:

- Research published in the Journal of Online Learning and Teaching found that online courses have an average completion rate of around 55%, compared to approximately 45% for traditional face-to-face courses.

- Data from Coursera, one of the largest online learning platforms, indicates that completion rates for Massive Open Online Courses (MOOCs) typically range from 5% to 15%, depending on the course and subject matter.

3. \*\*Academic Performance\*\*:

- A meta-analysis published in the journal Review of Educational Research analyzed 99 studies comparing the academic outcomes of students in online and traditional face-to-face settings. The analysis found a small but statistically significant effect in favor of online learning, with online students performing slightly better, on average.

- Research conducted by the U.S. Department of Education found that students in blended learning environments (combining online and face-to-face instruction) performed better, on average, than those in traditional face-to-face settings, with an effect size equivalent to approximately 0.2 standard deviations.

4. \*\*Satisfaction and Engagement\*\*:

- Surveys conducted by online learning platforms such as edX and Udacity have found high levels of satisfaction among students enrolled in online courses, with over 90% of respondents reporting satisfaction with the quality of instruction and course materials.

- Data from learning management systems (LMS) used in online courses, such as Canvas and Blackboard, provide insights into student engagement metrics such as time spent on tasks, frequency of logins, and participation in discussion forums.

5. \*\*Graduation and Employment Outcomes\*\*:

- Longitudinal studies tracking the outcomes of students who have completed online degree programs have found that they achieve similar graduation rates and employment outcomes compared to their counterparts in traditional on-campus programs.

- A survey conducted by Gallup and Strada Education Network found that 84% of online learners believe that their degree or certificate has increased their earning potential, with a median increase in annual income of $28,000.

These numerical data points provide empirical evidence of the impact of online learning platforms on various aspects of student performance, including access, retention, academic outcomes, satisfaction, and employment prospects.

**CHAPTER FIVE: CONCLUSION AND RECOMMENDATION**

# **5.1 CONCLUSION**

In summing up we would want to state that given a chance , this project

Will serve to meet and solve most of our stated problems like :

* Time wastage
* Increased social vices
* Moral decay
* Improve the current educational system
* Create an unprecedented level of accountability
* Reduce cost of tuition

With all factors considered ,our project will serve and meet its objectives

and ensure high academic perfomance .

We suggest that more analysis be done be done on the project to ensure

maximum efficiency in studying at home .

According to data obtained we have realized an advantageous effect of

our project as it is highly efficient than tuition .

. This is going to meet some

of the emerging issues like addiction to social media.

# 

# **5.1.1 LINKAGE TO EMERGING ISSUES**

Kenya, as a developing country relies mostly on its technological advances in helping the future generation secure a bright predictable future.

This implies that technology is the key to development of this country’s educational system through study websites.

Emerging issues in online learning reflect the evolving landscape of education and technology. Here are several noteworthy issues:

1. \*\*Digital Equity and Access\*\*:

- The digital divide remains a significant concern, with disparities in access to technology and reliable internet connections impacting students' ability to fully participate in online learning.

- Addressing digital equity requires efforts to provide technology resources and internet access to underserved populations, including rural communities and low-income households.

2. \*\*Quality Assurance and Accreditation\*\*:

- Ensuring the quality of online education and maintaining accreditation standards are ongoing challenges. As online learning continues to expand, there's a need for robust quality assurance mechanisms to evaluate the effectiveness of online courses and programs.

- Accreditation agencies are adapting to the digital learning environment by developing standards and guidelines specifically tailored to online education.

3. \*\*Privacy and Data Security\*\*:

- Online learning platforms collect vast amounts of student data, raising concerns about privacy and data security. There's a need to establish clear guidelines and regulations to protect students' personal information and ensure data security.

- Educational institutions must implement robust cybersecurity measures to safeguard sensitive data from unauthorized access and breaches.

4. \*\*Digital Pedagogy and Teacher Training\*\*:

- Effective online teaching requires specialized skills and pedagogical strategies that differ from traditional classroom instruction. Many educators lack training in online pedagogy and may struggle to adapt their teaching practices to the online environment.

- Teacher training programs need to incorporate digital pedagogy into their curricula and provide professional development opportunities for educators to enhance their online teaching skills.

5. \*\*Assessment and Academic Integrity\*\*:

- Maintaining academic integrity in online assessments presents challenges, as students may have greater opportunities to cheat or engage in academic dishonesty.

- Educational institutions are exploring innovative approaches to assessment, such as proctoring software, plagiarism detection tools, and authentic assessment tasks, to ensure the integrity of online evaluations.

6. \*\*Digital Citizenship and Online Behavior\*\*:

- Online learning environments require students to develop digital citizenship skills, including responsible use of technology, online communication etiquette, and critical thinking about digital content.

- Educational institutions play a critical role in promoting digital citizenship through curriculum integration, digital literacy programs, and proactive measures to address cyberbullying and online harassment.

7. \*\*Social and Emotional Well-being\*\*:

- The shift to online learning can exacerbate feelings of social isolation and disconnection among students, particularly those who thrive on interpersonal interaction.

- Supporting students' social and emotional well-being in online learning environments requires proactive measures, such as fostering virtual communities, providing mental health resources, and promoting digital wellness practices.

Addressing these emerging issues in online learning requires collaboration among educators, policymakers, technology providers, and other stakeholders to ensure that online education remains accessible, equitable, and effective for all learners.

# **5.1.2 CHANGE IN PARAMETERS**

1. Instead of study apps a fully independent website is used hence time is saved.
2. The current education system that is age-old is improved by making use of the students love for internet and social media at large to cultivate it to academic works.
3. To create an unprecedented level of accountability of the student to the parent.

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# **5.2RECOMMENDATIONS:**

1. Website be secured from spy apps which lead to misinformation

2. Technical assistance be offered to the website for efficient functioning

**5.3 REFERENCE**

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*Zeraki Learning, Available at* [*https://www.zeraki.co.ke*](https://www.zeraki.co.ke)

*THE END*