**CHAPTER TWO**

**LITERATURE REVIEW**

**2.1 Introduction**

The literature review for this project on the design and implementation of an Improved Online Assignment Submission Platform examines existing research and advancements in educational technology, with a focus on enhancing the assignment submission process. It analyzes current trends, challenges, and opportunities in utilizing modern tools to streamline academic workflows. The review studies the evolution of online assignment submission systems, from basic file upload capabilities to sophisticated platforms incorporating emerging technologies such as cloud computing, artificial intelligence, and blockchain. Key focuses include scalability, security, user experience, and teaching integration. The findings will inform the development of an enhanced online assignment submission platform that addresses the evolving needs of educational institutions.

**2.2 Review of Related Work**

Adams and Brown (2019) propose an online assignment submission platform designed using PHP and MySQL, targeting higher education institutions looking to digitize assignment management. The system allows students to log in with institutional credentials, select courses, upload assignments in various formats (e.g., PDF, DOCX, PPT), and verify submission. After instructors complete grading, students can view grades and feedback. Built on PHP with a MySQL database, the system supports basic functionalities but has limitations in scalability, particularly when handling high volumes of concurrent users, and lacks features like real-time feedback and mobile support.

Lin et al. (2020) present an assignment submission system using Django (Python) and PostgreSQL, with Google Drive integration for cloud storage. The system enables students to log in, navigate to their course’s assignment page, upload files that are then stored locally and on Google Drive, receive notifications about grading, and track grades for the semester. Utilizing Django for server management and PostgreSQL for database handling, the limitation of the system is on it reliance on Google Drive which can cause disruptions if external API issues occur, and it lacks offline access capabilities, limiting functionality in low-connectivity areas.

Thomas and Singh (2021) developed a blockchain-based submission platform using Ethereum and Solidity, enhancing security and transparency. Students authenticate their identities through blockchain, upload assignments that are time-tagged on the blockchain, and can later access submission history for verification. Grades and feedback are also recorded on the blockchain, ensuring data integrity. Although this Ethereum-based system secures records immutably, it requires high computational power, which can increase operational costs, and the complex interface may be challenging for users unfamiliar with blockchain.

Rodriguez and Lee (2018) propose a mobile-responsive assignment submission platform built using React Native and Firebase, optimized for accessibility on mobile devices. Students access the app via mobile, log in, select courses, upload assignments from local storage or cloud (e.g., Google Drive), and receive push notifications for submission confirmations, feedback, and grades. Leveraging React Native for cross-platform compatibility and Firebase for real-time data management, the limitation of the system it may experience performance slowdowns during peak usage. Firebase’s limited data analytics tools also restricts detailed reporting options.

Nguyen and Zhao (2017) introduce a web-based assignment system built on Angular and Node.js, focusing on real-time submission tracking. Students log in, submit assignments, receive real-time confirmation, and can view grading status updates after the evaluation of the uploaded assignment by instructors or lecture. The platform’s responsive design allows usage on various devices, but as it depends on a constant connection to the server, users in areas with unstable internet may experience submission delays. Limited offline access also restricts student use in remote locations.

Kumar and Patel (2019) developed a peer-review enabled submission system using Laravel (PHP) and MySQL. Students submit assignments, review peers’ submissions, and then finalize their own submissions based on peer feedback before the instructor’s review. The platform provides insights on how students perform in relation to peers but may face challenges with students hesitant to engage in peer review. Additionally, high usage volumes could create server load issues due to Laravel’s moderate scalability.

Wilson and Jones (2020) designed a cloud-integrated platform in ASP.NET and Azure, allowing students to submit assignments stored in cloud servers for enhanced accessibility and security. Students log in, submit assignments, and track progress across semesters. Instructors can access the cloud for grading and leave real-time feedback. Despite robust storage, reliance on Azure for cloud access can create service disruptions, and operating costs may be higher for institutions.

Miller and Taylor (2021) present a multimedia-supportive platform created in Flask (Python) with PostgreSQL, enabling students to upload images, videos, and documents as assignments. Students log in, select multimedia types, submit content, and view grades and multimedia feedback from instructors. The platform’s broad multimedia support allows a variety of assignments but may suffer performance issues with larger files and higher storage needs.

Ramos and Choi (2018) propose a machine learning-enhanced platform built on Ruby on Rails and Scikit-Learn (Python), which evaluates initial drafts of text assignments and provides preliminary feedback. Students upload drafts, view suggestions from the machine learning algorithm, and submit revised versions. While helpful for basic grammar and style, the AI may struggle with nuanced responses, and server capacity may limit processing speeds with high usage.

Hernandez and Green (2022) offer a gamified submission system built in Unity and Firebase. Students submit assignments, receive achievement badges for timely submissions, and track grading through a visual progress interface. The Unity-based gamification encourages engagement, but Firebase’s limited analytics restricts reporting options, and the system may appeal less to students who prioritize academic performance over rewards.