September 19, 2025

BACKGROUND OF THE STUDY RRL

1. <https://digitalleadership.com/blog/vuca-world/>
2. <https://twistjournal.net/twist/article/view/499/349>
3. <https://journal.uny.ac.id/index.php/jser/article/view/64669/pdf>
4. <https://arxiv.org/pdf/2212.08039>
5. <https://www.mdpi.com/2617700>
6. <https://docs.moodle.org/500/en/Using_Assignment>

In today’s rapidly evolving technological era, the constancy of change outweighs any semblance of certainty, positioning every organization within what is known as a VUCA world – Volatility, Uncertainty, Complexity and Ambiguity [1]. This continual shift in technologies, tools, and systems requires institutions to continuously adapt and innovate. Within the realm of higher education, these strategies encompass a range of initiatives designed to foster creativity, adaptability, and efficiency. Innovation in educational institutions often involves the integration of advanced technologies [2]. In line with this, digital technology has been recognized as a powerful tool that enhances both teacher and student effectiveness [3].

In the Philippine context, a study at Adamson University developed an Integrated Educational Management Tool—designed in 2017 but published in 2022—that automates examination and grading, reduces redundancy in records, improves efficiency, and provides features for offline access with online synchronization [4][7]. Similarly, a study among higher education teachers in Romania revealed that about 17.95% regularly use a variety of digital assessment tools, while roughly 12.82% systematically use digital feedback methods [5].

Despite the growing presence of web-based and online systems, challenges such as unstable internet connectivity, limited resources, and accessibility issues remain prevalent in many academic institutions. These realities highlight the need for reliable alternatives that can function even without constant online access. For example, Moodle has incorporated offline grading workflows that allow teachers to download grading sheets, work offline, and later re-upload results when connectivity is restored [6]. Collectively, these examples emphasize that developing an offline or desktop-based grading system provides a practical solution—ensuring that teachers can efficiently manage, record, and compute student grades regardless of connectivity constraints, while still maintaining accuracy, reliability, and ease of use.