E-Learning Educational Atmosphere and Technology Integration as Predictors of Students' Engagement: The Case of Agribusiness Program

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Abstract

This study aimed to determine whether the e-learning educational atmosphere and technology integration significantly influence the students' engagement. The study employed a descriptive-correlational research design with 127 fourth-year college students from Davao del Norte, Philippines selected through universal sampling. The study used three adapted questionnaires to gather data, and statistical tools such as mean, Pearson r, standard deviation, and regression analysis were utilized. The e-learning educational atmosphere on students in terms of programme effectiveness, teaching quality, ethics and professionalism, learner support, safety and convenience, and awareness of the rules is much observed. Students' engagement, perceived ease of use, perceived usefulness, and attitude toward integrating are much evident. Students' engagement in terms of affective, behavioral, and cognitive are much manifested. The findings also revealed that the e-learning educational atmosphere has a significant relationship and influence on students' engagement. On the other hand, technology integration has a significant relationship and influence on students' engagement. The study highlights the importance of creating a safe and convenient e-learning environment and promoting the use of technology in enhancing students' engagement. The study's limitations include the sample size and the context-specific findings. The results imply the need for instructors, school administrators, and CHED officials to collaborate and establish programs that promote students' engagement through e-learning and technology integration.

Keywords: *E-learning educational atmosphere, Technology Integration, Students' engagement*

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Introduction

Student engagement is crucial for fostering attention, curiosity, and interest in learning. Low engagement has become a concern in education, necessitating collaboration between instructors and students for meaningful learning experiences. Agricultural courses often struggle with engagement due to a lack of genuine learning environments. Disengagement can also stem from poor course impressions and teaching strategies. Overcoming engagement challenges is vital across learning contexts, demanding effective strategies to create a positive learning environment that sparks enthusiasm for learning (Groccia, 2018; Nalipay et al., 2020; Kiezel et al., 2020; Irani-Kermani et al., 2021; Sutton & Jorge, 2020).

Tertiary-level students in the Philippines show little interest in agriculture, hindering its development. Research by David et al. (2022) reveals a motivation gap, shifting students away from agriculture to other sectors. This worsens the country's agricultural underdevelopment, demanding swift action from policymakers, educators, and stakeholders. Addressing this requires understanding factors causing disinterest and implementing strategies like improving education quality, promoting agriculture through outreach, and supporting students in pursuing agricultural careers. The study was motivated by the need to address gaps in literature regarding e-learning, technology integration, and student engagement in agriculture courses, specifically in the local context. Urgency arose due to limited teaching modalities (blended virtual and face-to-face) and the ongoing use of these methods at the local state college where the research took place.

This study aimed to enhance student engagement in agriculture courses by exploring the impact of e-learning environments and technology integration. It addressed challenges posed by the new normal of virtual learning. The research aimed to uncover connections between e-learning, technology, and student engagement, thus contributing to better agriculture education. The findings could inspire innovative teaching strategies, benefiting educators and advancing 21st-century agriculture education. This research is crucial for improving the quality of agriculture education amid the challenges of the new normal.

The purpose of the study was to determine whether the e-learning educational atmosphere and technology integration had a significant influence on the engagement of fourth-year college students in agriculture courses in the local college of Davao del Norte during the academic year 2022-2023.

Methodology

This study utilized a quantitative non-experimental descriptive and correlational research design, focusing on numerical data collection and analysis to identify patterns and relationships within a specific sample population (Bhandari, 2020). Non-experimental methods were employed to explore social phenomena without manipulating the participants' environment or employing random assignment to groups. The E-learning Educational Atmosphere Measure (EEAM) consists of a 32-item survey questionnaire assessing five components of e-learning ambiance: Programme Effectiveness, Teaching Quality, Ethics and Professionalism, Learner Support, Safety and Convenience, and Awareness of the Rules. The questionnaire demonstrates good internal consistency with Cronbach's alpha values of 0.744 (PE), 0.704 (TQ), 0.752 (EP), 0.809 (LS), 0.894 (SC), and 0.872 (AW), collectively yielding a reliability of 0.796.

Furthermore, the Digital Technology Integration Questionnaire (DTIQ) includes a 15-item survey with four technology integration components: Perceived Ease of Use, Perceived Usefulness, and Attitude toward Integrating. The questionnaire shows strong internal consistency, with Cronbach's alpha values of 0.903 (PEU), 0.866 (PU), and 0.849 (AI), yielding a collective reliability of 0.872. Additionally, the Student Engagement in Schools Questionnaire (SESQ) is a 21-item survey assessing student engagement across three components: Affective Engagement, Behavioral Engagement, and Cognitive Engagement. The questionnaire demonstrates strong internal consistency, with Cronbach's alpha values of 0.804 (AE), 0.822 (BE), and 0.849 (CE), resulting in a collective reliability of 0.842.

Findings

The study's key findings highlight the levels of e-learning educational atmosphere, with awareness of rules obtaining the highest mean (4.50) followed by teaching quality, ethics and professionalism, learner support, and programme effectiveness. Safety and Convenience had the lowest mean. Technology integration indicated the highest mean for attitude toward integrating (4.26) and perceived usefulness (4.24), while perceived ease of use had the lowest mean (4.14). Student engagement components ranked cognitive engagement highest (4.34), followed by behavioral engagement (4.26) and affective engagement (4.40). Notably, both e-learning educational atmosphere and technology integration had a substantial positive relationship with student engagement (r=0.762 and r=0.743, respectively, both p<0.000), leading to the rejection of the null hypotheses. Additionally, the study affirmed the significant influences of e-learning

educational atmosphere ($\beta = 0.511$, $p < 0.000$) and technology integration ($\beta = 0.356$, $p < 0.000$) on student engagement, prompting the rejection of the respective hypotheses.

Conclusion

The study sheds light on several critical aspects of e-learning educational atmosphere and technology integration in relation to student engagement. Notably, the findings underscore the high levels of awareness of rules, teaching quality, ethics and professionalism, learner support, and programme effectiveness within the e-learning environment. While Safety and Convenience emerged with a relatively lower mean, the overall e-learning educational atmosphere was shown to significantly correlate with increased student engagement, as was the case with technology integration. This suggests that fostering a conducive e-learning atmosphere and effective integration of technology can significantly enhance student engagement. The study's implications highlight the need for educators and policymakers to prioritize these factors to optimize the learning experience and outcomes in e-learning contexts. As a recommendation, educational institutions could focus on enhancing Safety and Convenience aspects while further emphasizing strategies to sustain the positive impacts of awareness of rules, teaching quality, ethics and professionalism, and learner support. Moreover, continuous efforts should be made to effectively integrate technology into educational practices, acknowledging its substantial influence on enhancing student engagement and, consequently, overall learning outcomes.

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