Social Environment Education through Ethicwise Innovation

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Abstract
The Ethicwise application was created to facilitate the learning and teaching process for students enrolled in the Ethics, Values, and Professional Practices in the Environment course. When examining ethics and values from an environmental perspective, Ethicwise is regarded as an assessment tool. Few learning innovations have been devised to investigate the values and ethics of environmental care. Therefore, this investigation examines the efficacy of employing Ethicwise in the environment course's ethics, values, and professional practice. The Ethics, Values, and Professional Practices in the Environment course is being taken by 48 students at UniSZA, and the study design is a mixed-method. The data acquisition method involves the distribution of questionnaires and interview sessions. SPSS software is employed to conduct descriptive analyses of the data. The data indicates that the majority of respondents are exceedingly pleased with the Ethicwise application's capacity to facilitate environmental case studies in the field. This discovery enhances the quality of education by facilitating learning and instruction, particularly in the environment.
Keywords: Social Environment, Ethicwise, Education, Innovation, Teaching and Learning

Introduction
Innovation in teaching and learning has become essential to enhancing student engagement, fostering lifelong learning, and improving educational outcomes. Therefore, a transformed traditional teaching method must integrate technologies, adaptive learning environments, and pedagogical strategies. Innovative teaching and learning approaches leverage tools like artificial intelligence, gamification, virtual and augmented reality and data-driven assessment for diverse learners. Application in education facilitates collaboration, problem-solving and critical thinking and boosts motivation among students at any level (Capecchi, I. et al., 2025).

In Malaysia, the Ministry of Higher Education (MOHE) has implemented various efforts and initiatives to meet education needs and achieve high-tech and dynamic teaching and learning. The latest initiative of MOHE is the preparation of the Strategic Plan for 2023 – 2025. This plan explains the methods used to address issues related to the primary performance of the system, quality, efficiency, and the influence of the global environment in shaping the higher education landscape, which requires creativity and innovation. It is also to develop human capital to address the challenges of the digital era, namely the era of Industrial Revolution 4.0.

The fields of Values, Ethics and Professional Practice in the Environment aim to delve into the aspects of values, ethics and professional practice that should be used as a basis and guide and practised by students and organisations from various perspectives and dimensions in terms of racial and religious diversity, philosophical diversity and science. In addition, this course also emphasises the importance of values and ethics in professional practice in environmental protection. These ethical principles must be practised, and issues and challenges in practising values and ethics in environmental care. One of the effective ways of teaching and learning in environmental education is through education (George & Archontia, 2013). Students can improve their understanding of environmental theory, practice, assessment, and problem solving aspects of the environment through educational software applications that are built with a user-friendly interface (George & Archontia, 2013).

In this study, an educational innovation application called EthicWise was introduced. The EthicWise innovation technology application was developed as an assessment tool to study the elements of values, ethics and environmental professionalism in digital case studies while in the field. This application makes it easier for students to collect quantitative research data through a five (5) point Likert scale. The main importance of this EthicWise innovation is implementing data-based professional practices regarding the environment. This is to train students in analysing data and making decisions based on data to manage the environment professionally through digitalisation methods. In addition, this EthicWise has a significant impact on teaching and learning in terms of cultivating values and ethical awareness and decision-making towards the environment, fostering green practices through digital learning and increasing global awareness of digital access. The development process of the new EthicWise application emphasises three things, namely, 1) values, 2) ethics, and 3) professional practice in an environmental case study. Students will assess these three things using a Likert scale assessment. Therefore, This paper examines the effectiveness of Ethicwise innovation of social environmental study in the aspects of value, ethics and professional practice, highlighting the impact on education.

Literature Review
Model of Instructional Design
This study examines the Instructional Design model, which serves as a framework for applying educational technology. Braxton et al. (1995) assert that this model integrates fundamental components of the instructional design process, encompassing target group analysis and identifying teaching goals and objectives. This instructional design seeks to facilitate learning rather than impart knowledge (Gagne et al., 2005). This model is displayed in an appealing graphical way. The model underscores the components of Analysis, Design, Development, Implementation, and Evaluation (Norazah, 2020). On of the model is ADDIE

(Analysis, Design, Development, Implementation, and Evaluation) model provides a flexible framework for instructional designers to craft impactful eLearning courses. While iterative and dynamic, the ADDIE process distills a streamlined yet attentive roadmap for continuous self-assessment.

Incorporating technology in higher education has garnered considerable focus in recent years, propelled by the necessity to augment student engagement and boost learning results. Multiple studies have demonstrated that technology-enhanced learning settings can promote student motivation and improve academic achievement. A meta-analysis by Muilenburg and Berge (2019) showed that technology-enhanced learning markedly enhances student engagement by fostering interactive and collaborative learning experiences. This corresponds with the study's findings, indicating that 75% of participants had increased motivation in technology-enhanced environments (Muilenburg and Berge 2019; Chen & Zheng 2023)

The constructivist approach asserts that learners actively build knowledge through their interactions with the environment, with technology serving a crucial function in this process (Jonassen, 2003). As emphasised in the present study, the employment of interactive instruments, like gamified quizzes and virtual simulations, reinforces this viewpoint by offering personalised feedback and fostering deeper learning. A recent study by Deterding et al. (2020) revealed that gamification in educational settings boosts engagement and improves academic performance.

Social Environment in Education
In social environment education, the emphasis is on professional practice elements that contain environmental values and ethics. (Olawumi and Mavuso 2023). Environmental ethics is a discipline that examines the moral relationship between humans and the natural environment, encompassing the nonhuman entities that live and form it. Despite increasing concerns over environmental challenges in various facets of human existence, ethical, and environmental principles and norms have not been adequately emphasised in environmental legislation (Moorthy & Akwen, 2020).

Therefore, environmental ethics and values can be acquired through education in schools and higher education institutions. A study by Liu et al. 2019) agrees that environmental education has a significant positive influence on ethics and literacy, primarily through technological innovations such as virtual reality. According to Chen et al. (2024), environmental education is essential for cultivating environmentally conscious and responsible individuals, especially in nations like China. Interdisciplinary learning, community engagement and technology integration are among the successful models of environmental education integration to foster environmental literacy (Chen et al. 2024; Duterte, 2024).

The previous study by Xia et al. (2023) in environmental education on innovative teaching models for environmental design majors based on information fusion technology showed a student behaviour recognition rate of 85%-91%, which are all the better than other models. Following implementing the new teaching style, which uses technology, the student feedback evaluation coefficient rose from 0.4 to 0.88. This shows that innovation using technology increased the quality of environmental education quality. Innovative field

research and contextual methodologies employing technology, such as Instagram and Google Earth, can enhance the educational experience in biology lessons concerning environmental change (Gusti et al. 2023).

Research Framework

Based on the study highlights, this study provides a research framework to build a technological innovation called the Ethicwise application, which contains elements of ethics, values and professional practice. This application only uses the Jotform and Google Form medium, which is used among students while studying in the environmental education class.

This application is expected to provide effectiveness from six aspects: 1) Understanding of values, ethics, and professional practices within the environment, 2) Problem-solving skills, 3) Influence on behaviour, 4) Utilization and accessibility of the Ethicwise innovation, 5) Motivation and Interest, 6) Collaboration and interaction with teacher and classmate

Sources: Author (2025)

Research Methodology

This study applies the pragmatisme paradigm. This paradigm deeply analyses human attitude and behaviour (Creswell & Creswell, 2022). This study is mixed-method. It was conducted in a public Malaysian university. The study sample included students taking an Ethic, Value and Professional Practices in Environmental course. It used a purposive technique for sampling, involving 48 respondents. The data collection method was a survey using a questionnaire. The research analysis was done using descriptive analysis using SPSS.

Research Finding and Discussion

There are six indicators to see the effectiveness of using Ethicwise learning and teaching technology, namely 1) Comprehension of values, ethics, and professional practices within the environment, 2) Problem-solving skills 3) Influence on behavior 4) Utilization and accessibility of the Ethicwise innovation, 5) Motivation and Interest 6) Collaboration and interaction with teacher and classmate

Table 1

Mean, Standard Deviation and Interpretation of Effectiveness of Ethicwise Innovation

No	Effectiveness of Ethicwise	Mean (M)	Standard Deviation (SD)	Interpretation
1	Understanding of values, ethics, and professional practices within the environment	4.64	0.40	High
2	Problem- solving skills	4.56	0.42	High
3	Influence on behavior	4.60	0.49	High
4	Utilisation and accessibility of the Ethicwise innovation	4.59	0.49	High
5	Motivation and Interest	4.48	0.60	High
6	Collaboration and interaction with teacher and classmate	4.56	0.50	High
7	TOTAL	4.58	0.38	

From table 1, the overall mean and standard Deviation is M= 4.58, SD= 0.38. The overall interpretation of the study was high level. Variable for Comprehension of values, ethics, and professional practices within the environment recorded the highest mean and standard deviation which is M=4.64, SD=0.40. While the lowest mean finding is Motivation and Interest (Mean= 4.48, SD= 0.60). While other variables are problem-solving skills (M=4.56, SD= 0.42), influence on behavior (Mean= 4.60, SD= 0.49), Utilization and accessibility of the Ethicwise innovation (Mean= 4.59, SD= 0.49) and Collaboration and interaction with teacher and classmate (Mean= 4.56, SD= 0.50).

This finding is reinforced by the interview findings that the technology called Ethicwise has greatly assisted learning, mainly when they conducted field studies regarding case studies regarding environmental values, ethics and professional practice projects. Informant 1 said: *"This application helped us conduct field studies. It gave us guidance on conducting surveys and interviews. This is because, in this application, there are already questions that need to be asked to respondents and informants of the study".*

This finding supports the philosophy and theory of connectivism (Siemens and Downes 2005) that learning sessions require digital and technological elements. This learning theory also states the need for strong network connections, namely digital resources, people and communities, and accessibility. However, there are also student informants who stated that the challenges of using this technology are internet issues and problems. Informants need a good internet connection to access the Ethicwise application during data collection. Informant 3: *"This innovation is good for environmental learning. But sometimes, I face problems with poor internet lines when using this innovation"*. For researchers, network vulnerabilities are beyond the user's expectations. However, the innovation's interface features are attractive and easy to use; according to most informant.

The second informant also suggests improving the collaboration element through ethical innovation. Among the suggestions is providing a chat room and gamification. These features are not in Ethicwise, but they are seen as interesting findings to consider for future innovations. This is in line with the studies of Deterding et al. (2020) and Jonassen (2003), which state that gamification features can improve academic performance.In fact, the findings also show that when technological methods are applied in environmental learning, it can increase knowledge and interest in the social environment, especially aspects of ethics and environmental values. This is agreed in the studies of Liu et al. (2019) and Chen et al. (2024).

Conclusions

By implementing this research, integrating innovative applications in teaching and learning in environmental studies has significantly transformed educational experiences and cater to diverse needs. According to the survey results, using Ethicwise's innovative technology in environmental education is practical and improves the quality of student learning. This study derived its findings on the effectiveness of ethical application in the environmental student population. Besides, this study contributes motivation by the urgent call to embed social and environmental consciousness within the learning ecosystem through innovative pedagogical tools. This innovation emerges as a timely response, aiming to cultivate ethical reasoning, empathy and proactive environmental stewardship among learners.

Nevertheless, this study has limitations as it relies solely on the university survey. To augment the trustworthiness of the findings, future studies should employ other research locations, such as schools and colleges, and conduct these with a larger cohort of informants. Nevertheless, it provides valuable resources for educational institutions to enhance learning through innovation. This study's findings can inform efforts to align these services with the overarching goal of promoting quality education, as outlined in the education policy, which provides a replicable framework that aligns with Education for Sustainable Development (ESD), thus enriching academic discourse and practical implementation in 21st-century education.

Acknowledgedment

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