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Development and Evaluation of an Online Educational Resource (OER) for the Four Core Values

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Abstract: This study aims to develop and assess an online educational resource (OER) for the core values of the Department of Education: Maka-Diyos, Maka-Tao, Makakalikasan, and Makabansa. Following Dabbagh's e-learning theory and the ADDIE model's phases (analysis, design, development, implementation, and evaluation), the OER was primarily built using Google Sites, with additional tools like Google Forms and Canva. The research involved 63 Grade 7 students divided into two sections, who were given a week to complete pretests and posttests, followed by a post-evaluation survey. Additionally, 16 teachers evaluated the OER using the same tool, the computer system usability questionnaire (CSUQ), modified to assess usability, quality, and interface. Both students and teachers provided feedback to enhance the OER. Results indicated a positive evaluation from both groups, demonstrating the platform's effectiveness in engaging students and fostering their understanding and appreciation of the core values. These findings underscore the OER's potential as a valuable medium for promoting and instilling these values, supporting educational objectives.

Keywords: *Online Educational Resource, OER, Core Values, Maka-Diyos, Maka-Tao, Makakalikasan, Makabansa, Google Sites.*

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I. INTRODUCTION

On June 12, 1996, President Fidel V. Ramos issued Executive Order No. 343, directing every citizen to learn, recite, and reflect upon the words of the Panunumpa ng Katapatan sa Watawat ng Pilipinas (Pledge of Allegiance to the Flag), which contains the following:

- "Ako ay Pilipino
- Buong katapatang nanunumpa
- Sa watawat ng Pilipinas
- At sa bansang kanyang sinasagisag
- Na may dangal, katarungan at kalayaan
- Na pinakikilos ng sambayanang
- Maka-Diyos,
- Maka-tao,
- Makakalikasan, at
- Makabansa."

The last four lines of the pledge have become the Philippine National Motto, as stated in Republic Act No. 8491, also known as the Flag and Heraldic Code of the Philippines, released on February 12, 1998.

Subsequently, the Department of Education (DepEd) adopted these four lines as its core values. These core values serve as guiding principles for teachers and learners, ensuring that they manifest, practice, and integrate these values into every aspect of their lives, even in simple ways (Dela Cruz, 2018). Teachers are required to incorporate the core values into their lesson plans and learning activities, while schools must ensure that all co-curricular and extracurricular activities are guided by these core values. Learners are expected to exhibit observable behaviors that reflect these embodied values, which are reflected in their report cards.

As stated in DepEd Order No. 8, s. 2015, the core values were translated into behavioral statements that include observable indicators to assist teachers in monitoring their students. The order also allows schools to create additional indicators based on their specific circumstances. Furthermore, additional learning activities and opportunities, apart from the Homeroom Guidance program, can be integrated into the curriculum. Given the circumstances of the past, including physical face-to-face classes, remote learning, and online classes, alternative approaches must be explored to promote and integrate these core values into lessons, even in remote and online learning environments.

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There remains a limited body of research that specifically focuses on concrete methods for integrating or promoting these core values. While modules have been developed to educate students about these values, the current landscape of education is rapidly evolving, with online platforms such as MOOCs and OERs becoming increasingly prevalent.

➢ *MOOCs and OER*

In recent years, classes have often been disrupted due to various reasons, such as natural calamities and health concerns, leading educational institutions to shift their modes of instruction and seek alternative ways to deliver education. Massive open online courses (MOOCs) have gained prominence in bringing learning opportunities directly to learners' homes (Hone & El Said, 2016). Additionally, Open Educational Resources (OER) have emerged as a significant force, addressing licensing issues and fees associated with MOOCs. OER refers to digitized materials that are freely available for teaching, learning, and research, allowing for their use, reuse, and remixing (Clinton, 2019).

Considering the capabilities of MOOCs and OERs to enhance students' learning experiences through increased accessibility, this paper aims to develop a core value-focused OER using the ADDIE (Analysis, Design, Development, Implementation, and Evaluation) model. The OER will cater to Grade 7 students and will primarily focus on providing basic information and activities for the promotion of the core values.

II. OBJECTIVES OF THE STUDY

The primary objective of this study is to develop and evaluate an online educational resource (OER) focused on the Department of Education's (DepEd) four core values: Maka-Diyos, Maka-tao, Makakalikasan, and Makabansa. The study details the design and development process of the OER, as well as its evaluation, to determine effective strategies and areas for improvement in creating and utilizing such a resource. The development follows the principles of e-learning (Dabbagh, 2005) and employs the ADDIE model as a framework.

Specifically, the study aims to create an OER that effectively incorporates the four core values. It also seeks to assess the developed resource in terms of usability, quality, and interface. Additionally, the study examines the respondents' mean pretest and posttest scores to measure their core skills related to Maka-Diyos, Maka-tao, Makakalikasan, and Makabansa. Finally, the study aims to determine whether there is a significant difference between the students' pretest and posttest scores, providing insights into the OER's impact on learning outcomes.

III. RESEARCH DESIGN

The present study employed a design and development research method since the focus of the study is to develop, implement, use, and evaluate an instructional material, in this case, an online education resource. The design and development of the OER is guided by the ADDIE model. Opinions, perceptions, beliefs, and experiences of the respondents were collected through the utilization of both physical copies of the instrument and online surveys using Google Forms. The surveys consisted of pre-established instruments that were modified by the researcher, incorporating rating scales and open-ended questions. The gathered data were summarized using quantitative and qualitative methods.

IV. RESEARCH PROCEDURE

A. Respondents of the Study

The study included a participant sample of 63 Grade 7 students, selected from two sections of a public secondary institution. Additionally, a total of 16 teachers specializing in Edukasyon sa Pagpapakatao (EsP) and Araling Panlipunan (AP) subjects constituted the teacher respondents for this research.

B. Instruments

Following the pilot implementation, a summative evaluation was administered to the participants, which was a mandatory survey required for obtaining their certificates. To measure the usability of the Open Educational Resource (OER), the computer system usability questionnaire (CSUQ) developed by Azami & Ibrahim (2019) was employed. This instrument comprises 28 indicators that are categorized into three sections: system usability, system quality, and system interface. To align with the objectives and outcomes of the current study, the survey was modified accordingly. Notable modifications included replacing all references to "system" with "OER" and excluding two items related to system quality as the feedback mechanism was not integrated into the OER. Additionally, the modified instruments incorporated three open-ended questions to gain a comprehensive understanding of the participants' overall experience. The post-evaluation for students was conducted online via Google Forms, while the teachers were provided with physical copies of the survey instrument.

C. Design Process

➢ *Analysis*

The analysis phase focused on identifying the key features and design elements necessary for the development of the OER. Since the resource centered on the four core values of DepEd, this stage involved determining learning competencies, course delivery methods, instructional materials, assessment strategies, and indicators of success. Additionally, the characteristics of the target users, platform selection, and a timeline for pilot implementation were established. The outcome of this phase was a set of learning plans that provided a structured framework, ensuring the alignment of educational content with the intended learning objectives and the core values.

➢ *Design*

In the design phase, the specific elements of the OER were outlined in detail, including content structure, multimedia components, and assessment strategies. Each

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core value was assigned a storyboard, incorporating graphics, videos, animations, and interactive tools to enhance engagement. A draft user interface was developed to ensure a visually appealing and navigable platform. The homepage was designed for simplicity, featuring clickable icons for each core value to facilitate ease of access. Lessons were structured with clearly defined objectives, discussions, pretests, and supplementary resources, ensuring an intuitive and user-friendly learning experience.

➢ *Development*

The development phase involved the creation of content assets for the OER, starting with the collection of open-sourced materials to minimize costs. Lecture materials were written based on the instructional design principles identified in the analysis phase. An IT expert was responsible for building the online platform, ensuring technical functionality and accessibility. Each version of the OER underwent review and testing by selected teachers, whose feedback informed continuous refinements. The homepage was designed using Canva-sourced images provided through DepEd subscriptions, while each lesson page featured structured content, assessments, and links to additional resources.

➢ *Implementation*

During implementation, two Grade 7 sections, each consisting of at least 30 students, were selected to use and evaluate the OER. Before access was granted, a face-to-face orientation session was conducted to guide students on website navigation, objectives, and participation requirements. Students were given one week to complete a series of posttests, and upon completion, they received certificates of participation. The implementation phase provided an opportunity to assess how students interacted with the OER and whether it met their learning needs effectively.

➢ *Evaluation*

The evaluation phase involved a summative assessment to determine the usability and effectiveness of the OER. Surveys were conducted among students and teachers to gather feedback, though some quality-related items were omitted due to the OER's current limitations in providing corrective feedback. A comparative analysis of pretest and posttest scores was also conducted to measure learning improvements. All test items underwent expert validation by EsP teachers and the head teacher to ensure reliability. The results from this phase will guide future enhancements and iterations of the OER to further improve its effectiveness.

D. Statistical Treatment

Descriptive statistics such as mean, mode, frequency, and percentages were used to summarize the data gathered from the needs assessment survey. Answers to open-ended questions underwent thematic analysis using the phases of thematic analysis by Braun and Clarke (2006).

Since the OER's usability evaluation used Likert scales, frequency and percentage were used to summarize the results. Wilcoxon signed-rank test was used to test if a significant difference exists between the mean pretest and posttest scores of the students.

V. FINDINGS

A. OER in Terms of Usability

Both students and teachers expressed high levels of satisfaction with the usability and quality of the OER. Students' perception scores ranged from 3.95 to 4.38, indicating overall positive feedback, while teachers rated all usability indicators with a perfect score. Despite the high ratings, students gave slightly lower scores to the OER's ability to help them learn faster (M = 3.95) and better (M = 4.02), as well as its role in facilitating peer learning (M = 4.03). However, they found the OER easy to use (M = 4.25), simple (M = 4.32), comfortable to navigate (M = 4.25), and enjoyable (M = 4.25). Overall, students reported a high level of satisfaction (M = 4.16), while teachers' satisfaction was extremely high (M = 5.00). Similarly, both groups provided positive ratings regarding the OER's quality, particularly praising the organization of content and the usefulness of the provided notes.

B. OER in Terms of Quality

Overall, students and teachers expressed high satisfaction with the quality of the OER, though students gave slightly lower ratings to most indicators except for two. The lowest-rated aspect was the duration required to complete the OER (M = 4.11), followed by the content's alignment with the course syllabus and the sufficiency of practice questions (both M = 4.25). While teachers provided very high satisfaction ratings, a few indicators—such as the usefulness of lecture notes and practice questions—did not receive perfect scores. Despite these minor variations, students rated the OER's quality highly (M = 4.37), while teachers expressed an even higher level of satisfaction (M = 4.97).

C. OER in Terms of Interface

Both students and teachers provided positive evaluations of the OER's interface, though students rated it slightly lower than teachers. Students acknowledged that the OER had all the expected functionalities and capabilities (M = 4.43), expressing high satisfaction with its design. In contrast, teachers gave perfect ratings across all three interface indicators. Despite the slight difference in scores, both groups positively assessed the OER's interface, highlighting its effectiveness and usability.

D. Pretest and Posttest Scores

The analysis of pretest and posttest scores across the four core values revealed mixed results. For Maka-Diyos, Maka-tao, and Makabansa, posttest scores were slightly lower than pretest scores, suggesting that students could answer many questions correctly even before engaging with the material, likely due to the common-sense nature of the questions. In contrast, the Makakalikasan core value showed an improvement in posttest scores (M = 5.00) compared to pretest scores (M = 4.70), possibly due to the objective nature of the questions requiring specific knowledge. The Wilcoxon signed-rank test confirmed that, except for Makakalikasan, there was no significant difference between pretest and

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posttest scores across the other core values. However, the increase in Makakalikasan posttest scores was statistically significant ($W = 0.000$, $p < .001$), indicating a measurable learning gain in that area.

VI. CONCLUSION

Drawing upon the findings of this study, it can be concluded that the development of an open online resource focused on the four core values of DepEd holds great promise as an educational tool. The overall positive evaluation received from both students and teachers signifies that this type of platform can effectively engage students in enhancing their understanding and importance of the core values, as well as providing avenues for improvement. The results demonstrate the potential of the open online resource to serve as a valuable medium for promoting and instilling these core values in students, highlighting its effectiveness in supporting educational objectives.

RECOMMENDATIONS

- Since this research's ADDIE process is still in its first iteration, a second iteration should be conducted in the future, incorporating all the feedback received from the post-evaluation.
- In terms of usability, the students gave lower ratings to indicators related to faster learning, better understanding, and gaining additional information from the OER compared to other indicators. This could be attributed to factors such as poor internet connection, gadget compatibility issues, and limited information available. Therefore, it is highly recommended to prioritize students' gadgets, especially ensuring smooth internet browsing capabilities by designing interfaces requiring low data and increasing the availability of information to address these concerns effectively.
- In terms of quality, students rated the duration needed to complete the OER relatively lower than the rest. Since this is an online educational resource, the students must have utmost flexibility to complete the activities and assessments.
- The practice questions provided are insufficient in number, and the clarity of some questions has been a concern for some teachers. It is highly recommended to increase the quantity of practice questions to adequately cover the lessons. Additionally, prioritizing the clarity of each question should be emphasized in future development efforts.
- The effectiveness of the other suggested activities can be explored as a direction for future research.
- Integrating a feedback mechanism into the platform may significantly improve its usability. Also, the CSUQ items related to the feedback mechanism may now be included on the evaluation.
- One of the reasons for choosing Google Sites was its accessibility to DepEd teachers and its ease of use. Therefore, future research could focus on other teachers adopting or enhancing the same platform.

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