Development of MOOC: A Beginner's Guide to Microsoft 365 for Novice Learners

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Abstract: *This study focuses on the development of a documented guideline named Massive Open Online Course (MOOC): " A Beginner's Guide to Microsoft Office 365," designed specifically for novice learners. With the increasing reliance on cloud-based productivity tools in both educational and professional settings, proficiency in Microsoft Office 365 has become essential. Thus, this research adopts a design-based research approach to guide the systematic planning and development of MOOC, integrating instructional design principles such as the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). The course content includes Microsoft Office 365 applications such as Word, Excel and PowerPoint, presented through engaging videos, interactive activities, and assessments, ensuring that materials were accessible, engaging, and aligned with the learning principles. Overall, the development process emphasized iterative design, which can contribute to best practices in MOOC development for digital skills training, particularly in supporting learners with minimal prior exposure to productivity tools like Microsoft Office 365.*

Keywords: *ADDIE model, development, interactive, novice, MOOC*

1.   INTRODUCTION

Massive open online courses (MOOCs) provide online learning opportunities for learners worldwide (Gallego-Romero et al., 2020), allowing them to learn anytime and anywhere (Shen et al., 2021). During the COVID-19 pandemic and after, Office 365 (now known as Microsoft 365), performed well as an integrated platform for blended education, according to several empirical studies.

Currently, MOOCs have become a widely adopted instructional model in higher education, with many universities offering institutionally developed courses through established online learning platforms. The development of MOOC ensures alignment with institutional learning outcomes, academic standards, and quality assurance processes. Thus, this MOOC is embedded within the university's formal digital learning strategy and is designed to support structured skill development for novice learners.

Microsoft Office promotes digital literacy, enhancing students' skills in data analysis, document generation, and presentation design, preparing them for academic and professional settings, according to a study by Rini et al. (2022). Microsoft Office helps students succeed academically and gets them ready for the workforce. Many professional fields, such as business, administration, and teaching, demand proficiency with Microsoft Office.

For many beginners, Microsoft Office applications such as Word, Excel, and PowerPoint present persistent challenges, including unfamiliar interfaces, limited understanding of core functionalities, and difficulty transferring isolated features into practical, task-based use. Therefore, a guided and systematic training approach is required to scaffold learning, reinforce conceptual understanding, and promote sustained competence.

According to Lake (2022), incorporating office productivity products like Microsoft Office into higher education gives students useful digital skills that improve their employability and prepare them for problems in the workplace. Hence, this Massive Open Online Course (MOOC): "Beginner's Guide to Microsoft Office 365," are designed to assist novices in learning office programs, which are crucial for everyday tasks including their studies and future workspace.

2. METHODOLOGY

This development adopted the ADDIE instructional design model as the framework for developing the MOOC. The ADDIE model is accompanied by the basic elements of the instructional design models, which were identified by Branch and Merrill (2011). The ADDIE model is a systematic and structured instructional development approach consisting of five phases: Analysis, Design, Development, Implementation and Evaluation. Each phase was executed carefully to ensure the MOOC met its learning objectives and delivered an engaging learning experience for novice users. Figure 1 shows the Development of a MOOC course based on the ADDIE Model. This figure was adapted from the study of The Implementation of the Lifelong Learning Micro-Credential Course Among Students from Universiti Tanjung Pura, Pontianak, Indonesia" by Wan Mohammad et al., (2025).
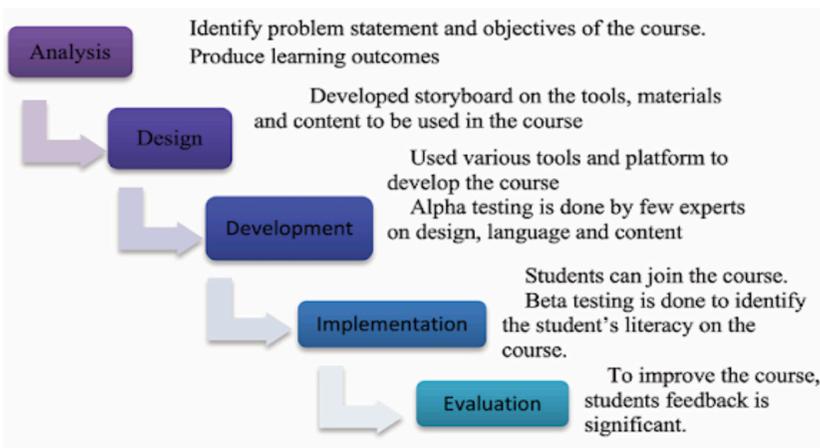

Figure 1. Development of MOOC based on ADDIE Model

The analysis phase identified the topics for the course development especially for novice level. Content analysis was carried out to define essential topics, while task analysis identified the key skills necessary to achieve competency in Microsoft Office 365. This phase ensured that the course objectives were relevant and tailored to the needs of the learners.

During the design phase, the course layout, learning flow and instructional strategies were planned in detail. The MOOC was divided into modular lessons covering Microsoft Word, PowerPoint and Excel. Each module included specific learning outcomes that guided the development of content and assessments.

The development phase focused on creating actual learning materials based on the course design. Video tutorials were developed using screen recording and audio narration to demonstrate each task clearly within the applications. Interactive quizzes were designed to provide instant feedback to learners and reinforce understanding. All materials were uploaded to UiTM's LMS, (UFUTURE UiTM) with a user-friendly layout.

The implementation phase involved launching the MOOC on UFUTURE UiTM. Participants can access the online course and were introduced to the course structure and navigation. The course was delivered asynchronously to provide flexibility for learners to access lessons based on their convenience.

Evaluation was conducted by the assigned evaluator among the lecturer to measure the effectiveness and usability of the developed MOOC. Feedback gathered from the evaluation phase was analyzed and used to improve the final version of the MOOC.

In conclusion, the ADDIE model provided a systematic and effective approach to developing the MOOC. Each phase contributed to the course's overall quality, beginning with a clear understanding of the outcome in the analysis phase, a well-organized instructional framework during the design phase, and the production of engaging learning materials in the development phase. The implementation phase ensured smooth delivery, while the evaluation phase allowed for improvement based on evaluator feedback.

All instructional materials used in this MOOC, including lecture videos, learning resources, assessments, and supplementary content, were developed and used in accordance with institutional ethical guidelines and relevant academic policies. The materials were either created by the course instructors or sourced from licensed or open-access resources.

3.   PROBLEM STATEMENT

The usage of Microsoft Office applications is most common in academic, corporate, and personal environments for a wide range of productivity tasks (Wang, 2024). Tools such as Word, PowerPoint, and Excel are widely used for document creation, presentations, and data analysis.

In educational institutions, students and teachers frequently use Microsoft Office tools for assignments, data management, and the preparation of effective teaching materials. However, many users lack the digital literacy needed to use these tools efficiently. Undergraduate learners often report difficulties with basic computer skills and digital competencies, which can hinder academic performance and learning outcomes (Nyambe, 2025).

Therefore, the development of the MOOC: Beginners Guide to Microsoft Office 365 aims to address these challenges by providing a structured, accessible, and engaging learning experience. This initiative supports learners in preparing professional documents with Word, developing creative presentations and create animations using PowerPoint as well as managing and analysing data with Excel. It offers a practical solution for novices to acquire essential digital skills that are crucial for academic achievement, career advancement, and lifelong learning.

4.   OBJECTIVE

Objective 1: To create professional documents using Microsoft Word
Objective 2: To develop creative presentations using Microsoft PowerPoint
Objective 3: To create spreadsheets and manage data using Microsoft Excel

5. RELATED WORKS

The increasing demand for digital skills in education and the workplace necessitates effective training solutions, particularly for cloud-based productivity suites like Microsoft Office 365 (Microsoft, n.d.). Massive Open Online Courses (MOOCs) have emerged as a scalable and accessible method for delivering digital skills training to diverse learner populations, including novices (Nuswantara et al., 2021). MOOCs offer structured, self-paced learning that can accommodate the varied prior knowledge and work habits of adult learners (Nuswantara et al., 2021).

5.1 ADDIE MODEL

A significant body of research supports the use of systematic instructional design models to improve the quality and effectiveness of online learning environments. The ADDIE model (Analysis, Design, Development, Implementation, and Evaluation) is a widely recognized framework for creating technology-based educational programs, including MOOCs (Kardosod et al., 2023; Buchem & Okatan, 2021).

In the context of technology-enhanced learning, the model supports alignment between pedagogical goals and digital tools, ensuring that instructional products are learner-centered and outcome-oriented (Molenda, 2015). Each phase of ADDIE functions iteratively, allowing feedback-driven refinement throughout the design process. Figure 2 shows the systematic approach implemented using ADDIE for novice users to a MOOC platform.

This ADDIE concept was adapted from the study of foundation of ADDIE phases by Branch (2009), adaptation concept of ADDIE for digital learning concept by Aldoobie (2015), discussion of integrating technology with ADDIE framework by Abuhassna et al. (2024) and MOOCs' successful design criteria by Yousef et al. (2014).
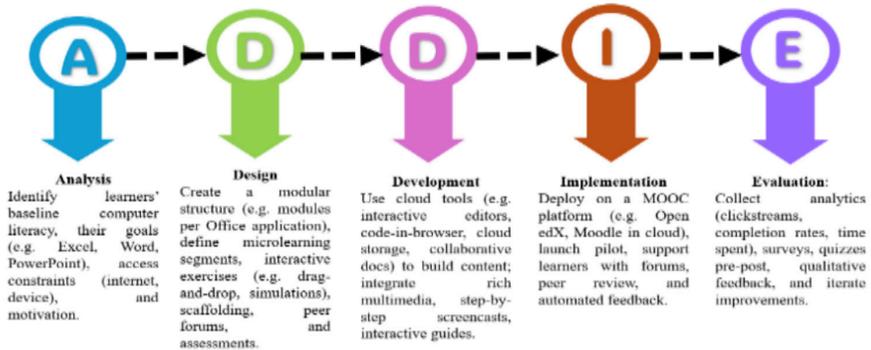
Analysis	Design	Development	Implementation	Evaluation:
Identify learners' baseline computer literacy, their goals (e.g. Excel, Word, PowerPoint), access constraints (internet, device), and motivation.	Create a modular structure (e.g. modules per Office application), define microlearning segments, interactive exercises (e.g. drag-and-drop, simulations), scaffolding, peer forums, and assessments.	Use cloud tools (e.g. interactive editors, code-in-browser, cloud storage, collaborative docs) to build content; integrate rich multimedia, step-by-step screencasts, interactive guides.	Deploy on a MOOC platform (e.g. Open edX, Moodle in cloud), launch pilot, support learners with forums, peer review, and automated feedback.	Collect analytics (clickstreams, completion rates, time spent), surveys, quizzes pre-post, qualitative feedback, and iterate improvements.

Figure 2. Adaptation of the ADDIE framework combination with MOOCs as cloud computing technology for novice users

5.2   MASSIVE OPEN ONLINE COURSES

Massive Open Online Courses (MOOCs) leverage cloud computing technologies to deliver scalable and accessible learning experiences to diverse audiences worldwide. As cloud-based platforms, MOOCs eliminate geographical barriers by hosting multimedia content, interactive assessments, and discussion forums through virtual servers that ensure on-demand access (Zhang et al., 2020).

Successful MOOC design for novice user digital skills requires adherence to specific pedagogical principles. Key design considerations include a competence-based approach, providing clear learning plans and pacing, and incorporating interactive media and engaging activities (Almeshal, 2020; Oh et al., 2023). Engaging video lectures, interactive exercises, and gamification can maintain motivation and adapt to different learner paces and knowledge levels, addressing the low engagement often associated with large-scale online courses (Oh et al., 2023)

Other important factors in novice learning are motivation and engagement. To sustain engagement, course design should incorporate achievable milestones, badges, and formative quizzes to provide continuous reinforcement. For Microsoft Office beginners, real-world, practical exercises such as formatting a report or designing a simple presentation can enhance perceived usefulness and promote intrinsic motivation (Deci & Ryan, 2000).

Overall, developing a MOOC focused on novice user Microsoft Office 365 skills is a valuable endeavor. The literature robustly advocates for the use of a design-based research approach, rooted on the ADDIE model, to guarantee the systematic development of accessible, pertinent, and engaging educational resources (Almeshal, 2020; Kardosod et al., 2023).

6. DEVELOPMENT OF MOOC: BEGINNERS GUIDE TO MICROSOFT OFFICE 365 (WORD, POWERPOINT, EXCEL)

The MOOC: Beginners Guide to Microsoft Office 365 (Word, PowerPoint, Excel) was developed using the UFUTURE platform. UFUTURE is the official Learning Management System (LMS) of Universiti Teknologi MARA (UiTM), designed to support teaching and learning for UiTM lecturers and students. However, the platform is also accessible to external users who can register for an account. Figure 3 displays the interface of UFUTURE and the MOOC, A Beginner's Guide to Microsoft Office 365 (Word, PowerPoint, Excel) respectively.
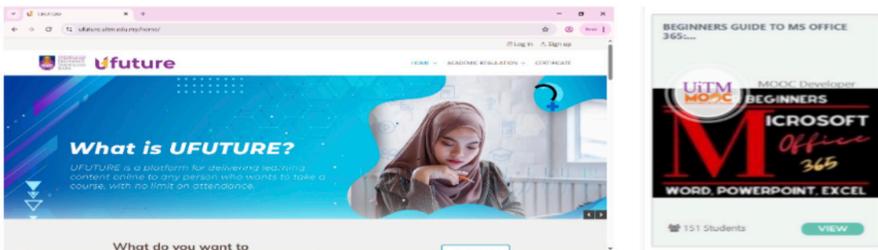
Figure 3. UiTM Learning Management System: UFUTURE and
MOOC: A Beginner's Guide to Microsoft Office 365 (Word, PowerPoint, Excel

Designing and implementing e-learning systems requires extensive knowledge across multiple disciplines. According to Minella (2025), a storyboard serves as an effective visual tool for communicating ideas, planning projects, and presenting narratives clearly and concisely within an organization. Therefore, before developing the MOOC content, a storyboard was created to outline and visualize the system's flow. Figure 4 illustrates the storyboard for the 'A Beginner's Guide to Microsoft Office 365' MOOC.
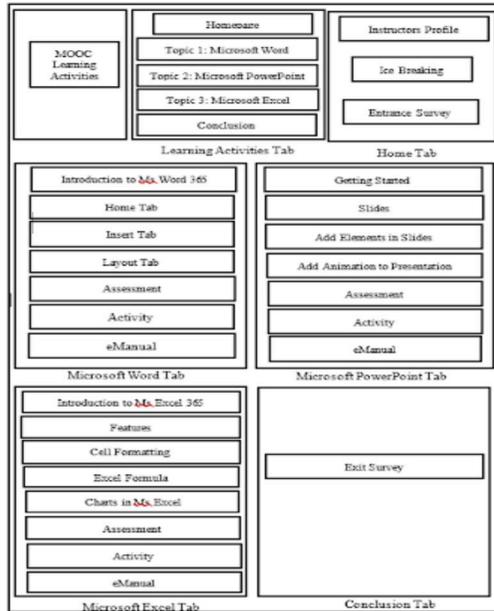
Figure 4. MOOC Storyboard

To generate interest and encourage enrollment in the course, a promotional video was produced, highlighting the key features and benefits of the MOOC to capture the attention of potential learners. In addition, an introductory video was created to provide newly enrolled users with a comprehensive overview of the course structure, learning outcomes, and what they can expect throughout their learning journey. Figure 5 shows the promotional video and the introductory video.
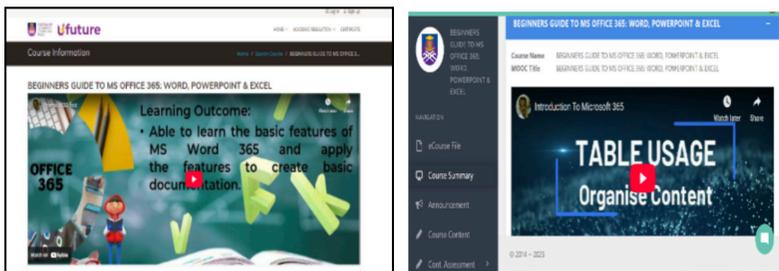

Figure 5. Promotional Video and Introductory Video

The MOOC learning activities consist of modules covering topics related to Microsoft Word, Microsoft PowerPoint, and Microsoft Excel. A Homepage, as well as a Conclusion section were also included. The course was designed using a standardized format to ensure consistency across all content areas. On the Homepage, learners are introduced the instructors as well as the course, through the Synopsis and Learning Outcomes. Ice breaking activities and the Course Entrance Survey can also be found on this Homepage. Additionally, an Exit Survey is provided at the end of the course to gather feedback from learners regarding their overall experience. Figures 6 and 7 illustrate the MOOC learning activities and the content featured on the Homepage.
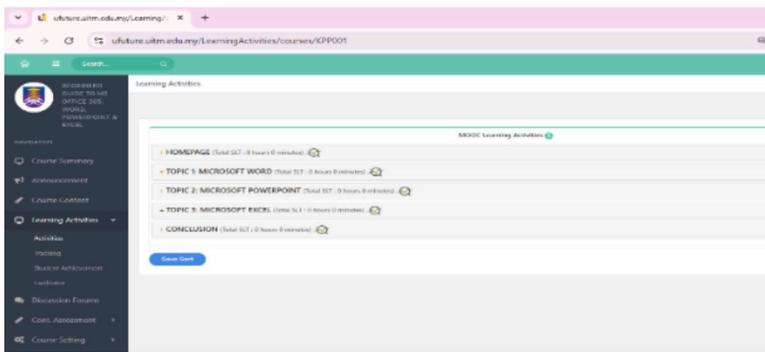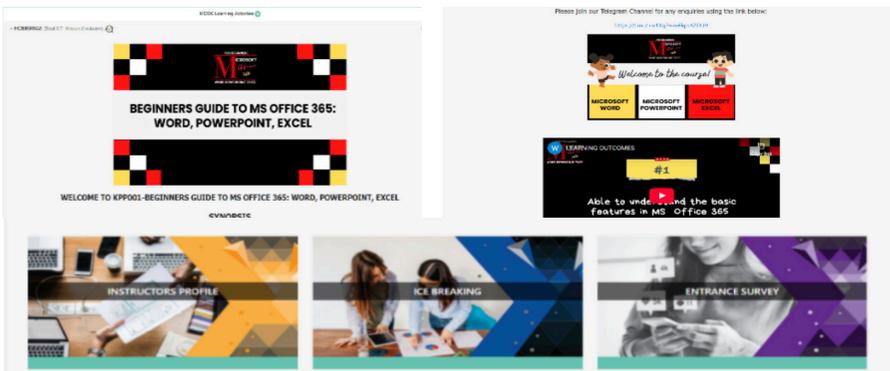

Figure 6. MOOC Learning Activities

Figure 7. Homepage Screen

Each topic within the course includes a combination of learning materials, interactive activities, and assessments to support student engagement and understanding. Teaching videos were created using tools such as Microsoft PowerPoint, along with various free online platforms including Canva, Biteable, Clipchamp, CapCut, and Kapwing. These videos were uploaded to YouTube and subsequently embedded into the UFUTURE platform for easy access by learners. Figures 8, 9, and 10 present the content structure for each topic, while Figure 11 highlights the learning materials in the form of embedded instructional videos.

Figure 8. Subtopics for Microsoft Word

Figure 9. Subtopics for Microsoft PowerPoint
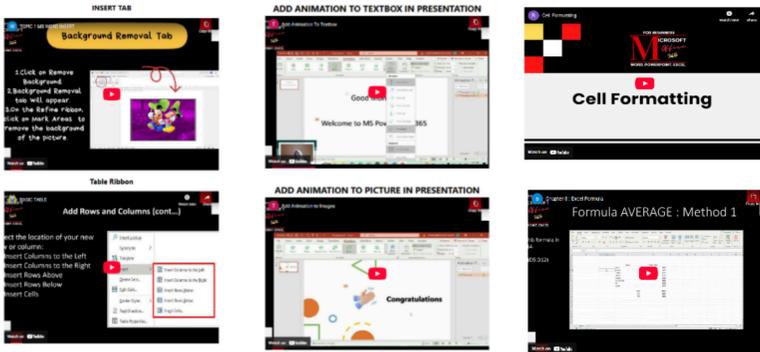

Figure 10. Subtopics for Microsoft Excel

Figure 11. Learning materials in the form of embedded videos

Interactive activities were developed using Wayground (formerly known as Quizizz) to enhance student engagement and reinforce learning. These game-based activities are designed for self-paced play, allowing students to test their understanding after completing each lesson. The questions focus on general concepts to assess comprehension of the covered topics. Figure 12 displays the features of the activity component.
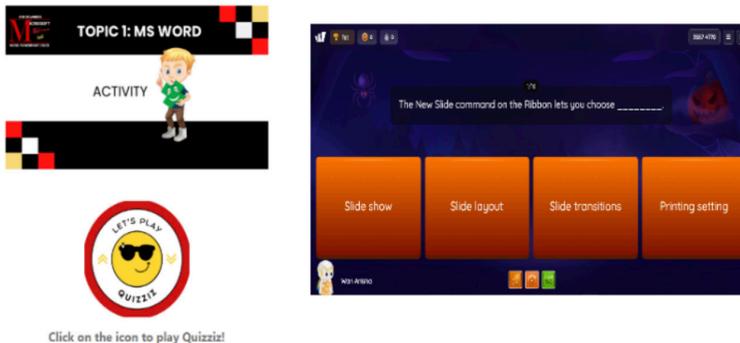

Figure 12. Activity using Wayground

Assessments were included at the end of each topic to ensure that students can apply the knowledge and skills they have acquired throughout the course. These assessments serve as a tool to evaluate learners' understanding and mastery of the content. Each submission is reviewed and graded by the instructors to provide appropriate feedback. Figure 13 presents an example of the assessment component.
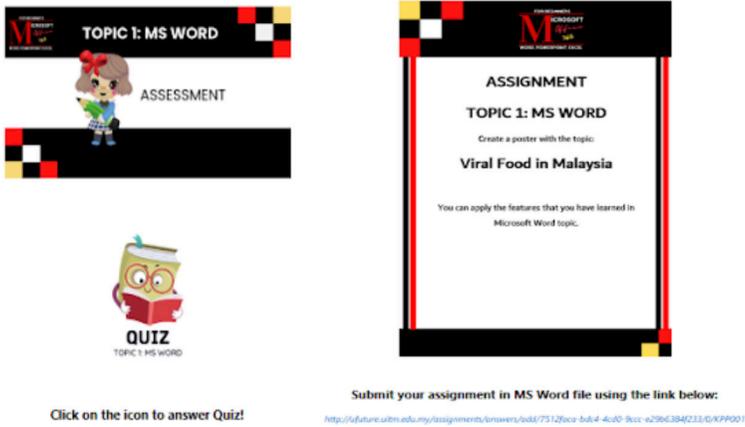
Figure 13. Examples of Assessments

Learners were also provided with an e-Manual, presented in the form of a flipbook, to further enhance their understanding of each topic. This manual contains detailed step-by-step instructions on how to use each software application. Figure 14 illustrates the e-Manual in its flipbook format.

Figure 14. eManual in the form of flipbook

7.   CONCLUSION

The MOOC with the title "A Beginner's Guide to Microsoft Office 365" successfully used the ADDIE model with its five principles (Analysis, Design, Development, Implementation, and Evaluation) for development. Each principle was implemented systematically to ensure that the course achieves its learning objectives and provides an engaging and accessible learning experience for novice learners. The course contents, which included Microsoft Word, PowerPoint and Excel, were designed to include instructional videos, interactive activities, assessments, and supplementary materials such as an e-Manual.

This approach not only enhanced the students' understanding but also encouraged self-directed and flexible learning. In general, this MOOC has strengthened the digital capabilities of novice users of Microsoft Office 365 applications. This approach also supports the university's mission to expand access to lifelong learning. It is hoped that this study will serve as a useful reference and guide for educators or digital content developers who wish to design MOOCs for digital skill development using a systematic and effective instructional design approach.

8.   ACKNOWLEDGEMENTS

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10. AUTHORS' CONTRIBUTION

Wan Anisha led the writing of the manuscript, Azlina prepared the introduction, Syarifah Adilah and Elly Johana focused on the related work, Saiful wrote the methodology while Rafizah prepared the conclusion. All authors offered valuable feedback and contributed to shaping the research, analysis, and manuscript.

11. CONFLICT OF INTEREST DECLARATION

We certify that the article is the authors' and co-authors' original work. The article has not received prior publication and is not under consideration for publication elsewhere. This research/manuscript has not been submitted for publication, nor has it been published in whole or in part elsewhere. We testify to the fact that all authors have contributed significantly to the work, validity and legitimacy of the data and its interpretation for submission to IJELHE.

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