**Research Title: "Exploring the Impact of Augmented Reality Technology on Student's Learning Outcomes in Education"**

1. **Introduction**

The use of Augmented Reality (AR) has surfaced as a promising technological advancement in the present times. Over the recent years, Augmented Reality (AR) has instigated a significant transformation in various fields, including the field of education. The ability of AR to combine virtual elements and reality provides users with an enhanced perception of their physical surroundings. Its potential to revolutionize education and transform traditional teaching methods has sparked significant interest among educators and researchers. Augmented Reality technology presents a distinct and immersive educational experience by combining virtual data onto the physical environment. The utilization of digital content facilitates real-time interaction for students and further strengthens their capacity to visualize complex concepts and abstract ideas. Through the fusion of physical reality and virtual simulation, augmented reality (AR) technology offers an immersive and interactive medium for students to navigate educational material, thereby cultivating participatory learning and bolstering information retention.

It has been twenty eight years since the development of the first augmented reality (AR) application constructed solely for employment in an academic and educational environment. Since then, augmented reality (AR) applications have been successfully integrated across diverse educational domains, levels, and settings, providing positive benefits to students and learners.

1. **Objectives**

Research Objectives:

1. To explore personalized learning experiences enabled by AR systems and examine their impact on students' learning outcomes.
2. To assess the influence of AR technology on knowledge acquisition and retention among students.
3. To evaluate the effectiveness of augmented reality (AR) technology in improving student engagement and motivation in the field of education.
4. To investigate the effectiveness of AR technology in promoting collaborative learning among students.
5. To provide a view of the current status of augmented reality in Philippine education, including the level of adoption, implementation challenges, and impact on teaching and learning outcomes.

The researchers hold the perspective that augmented reality (AR) technology is promising and has the potential to positively impact the education industry. However, it is important to note that this stance is based on their prior knowledge about Augmented Reality in the context of education. The examination of existing literature and observations of related studies is needed to verify whether the stance is true or not. Therefore, the primary objective of this research is to objectively explore and evaluate the impact of AR technology on student learning outcomes in order to determine whether its integration in education is beneficial or presents challenges. By adhering to the research objectives, the researchers aim to uncover empirical evidence that will shed light on the effects and implications of AR technology on students' engagement, motivation, knowledge acquisition, personalized learning experiences, collaborative learning, and the current status of AR in Philippine education. Through this research, the intention is to provide a comprehensive understanding of the potential benefits and limitations of AR technology in education, enabling educators, policymakers, and instructional designers to make informed decisions about its integration and utilization for enhancing student learning outcomes.

1. **Scope and Limitation**

This study is confined to the examination of the influences and effects of augmented reality (AR) technology within the domain of education. This investigation extensively examines the impact of Augmented Reality (AR) applications on the academic learning of students, highlighting specific aspects including student engagement and motivation, knowledge acquisition and retention, personalized learning experiences, and collaborative learning. Moreover, it presents an overview of the current status of augmented reality technology in the educational system of the Philippines.

The current investigation is not devoid of limitations. The study is delimited to the examination of augmented reality (AR) applications that are exclusively utilized within the context of education. This analysis disregards other conceivable applications of AR technology, which may have practical implications in diverse fields such as healthcare, tourism, or industry. The present study centers on students’ education, however, it does not extensively explore the various demographic and learning-style variables that may have effects on the potential influence of augmented reality technology on students' academic achievements. Furthermore, the present study fails to evaluate the precise hardware and software prerequisites for the implementation of augmented reality (AR) technology and its feasibility in different economic situations prevailing in the Philippines. Lastly, there is a constraint pertaining to the possible partiality or preconceived notions of the researchers towards the advantages of augmented reality (AR) technology within educational contexts, given that the researchers were mandated to disclose their preliminary stance with regard to the said technology. The present study endeavors to address potential biases by systematically and objectively evaluating the impact of Augmented Reality (AR) technology on students' academic performance. To achieve this goal, the study will employ a rigorous methodology, utilizing both secondary sources and empirical research to generate unbiased and reliable findings.

Despite its limitations, the present research can offer significant contributions and serve as a foundation for future investigations in diverse settings.

1. **Presentation of the Chosen Technology**
2. **Summary**
3. **Conclusion and Recommendations**
4. **References**

Billinghurst, M., Clark, A., & Lee, G. (2015). A survey of augmented reality. Foundations and Trends® in Human–Computer Interaction, 8(2-3), 73-272.

Billinghurst, M. (2002). Augmented reality in education. New horizons for learning, 12(5), 1-5.

Buchner, J., Buntins, K., & Kerres, M. (2022). The impact of augmented reality on cognitive load and performance: A systematic review. Journal of Computer Assisted Learning, 38, 285-303.

Dunleavy, M., Dede, C., & Mitchell, R. (2009). Affordances and limitations of immersive participatory augmented reality simulations for teaching and learning. Journal of science Education and Technology, 18, 7-22.

Garzón, J. A., & Acevedo, J. P. (2019). Meta-analysis of the impact of Augmented Reality on students’ learning gains. Educational Research Review, 27, 244–260. https://doi.org/10.1016/j.edurev.2019.04.001

Garzón, J. A. (2021). An Overview of Twenty-Five Years of Augmented Reality in Education. Multimodal Technologies and Interaction, 5(7), 37. https://doi.org/10.3390/mti5070037

Microsoft. (n.d.). What is augmented reality (AR) | Microsoft Dynamics 365. https://dynamics.microsoft.com/en-us/mixed-reality/guides/what-is-augmented-reality-ar/