COMPUTER-BASED MULTIMEDIA IN INSTRUCTIONAL PRACTICES: A BASIS FOR TECHNOLOGY APPLICATION FRAMEWORK FOR SELECTED HIGHER EDUCATIONAL INSTITUTION

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Abstract

Computer-based multimedia is regarded to be multimedia which delivers learning resources by using a range of media in an integrated method for the goal of instruction. The combination of media and technology in a global culture is transforming the way we teach and learn about the globe. The study aimed to develop a computer-based multimedia framework for selected state universities and private higher educational institutions. The study used the descriptive method of research utilizing a questionnaire-checklist as the instrument of the study to gather the needed data. The validated survey questionnaire was administered to the faculty in selected state universities and private higher institutions. Weighted mean and one-way ANOVA were used to quantitatively analysed the data. The study concluded that the faculty integration of computer-based multimedia in the teaching and learning process in selected state universities and private higher institutions in Cavite are utilized to a very high extent. High significant difference exists among selected state universities and private higher institutions in terms of preparedness and incorporation of using computer-based multimedia in instructional practice.

Keywords: Multimedia, Technology Application, Online Collaboration Tool

Introduction

Computer-based multimedia is one important media because it allows the faculty to prepare and interact with lessons while knowing the results or receiving feedback at the same time. Computer-based multimedia can simulate and enforce their lesson preparation and delivery, resulting in curiosity and comprehension to meet the learning objectives. Furthermore, computer-based multimedia can respond to faculty differences because they can prepare lessons according to their prepared time, slowly or quickly, depending on their ability. As a result, using computer-based multimedia in instructional practice can be beneficial to faculty.

The advent of Computer-based multimedia and the expansion of the Internet have revolutionized the way educators instruct and students learn in online and traditional environment. Computer-based multimedia gives educators a new platform to transmit lesson plans and learning materials, giving students the flexibility to learn at home or in the office. The ability to give educational services to students at home and in their place of employment, overcoming the time and travel limitations of traditional place-based face-to-face educational techniques, brings up new opportunities and difficulties for education to move online. Timely educational computer-based multimedia tools and application can be paired with hands on activities to increases critical thinking and promote learning skills

Methodology

Research Design

The study used the quantitative methodology to gathered and analyzed the data obtained from the respondents. According to Bhandari (2022), it is the process of collecting and analyzing numerical data. It can be used to find patterns and averages, make prediction, test causal relationship, and generalize results to wider population.

Research Instrument

A researcher-made questionnaire checklist was the main instrument in gathering the needed data. The said instrument measured the level of preparedness in using computer-based multimedia in classroom instruction and the rate of the extent of incorporation of computer-based multimedia in classroom instruction.

Respondents

The respondents in this study were 57 faculty from college of arts and sciences, 167 faculty form college of engineering and technology, 136 faculty from college of education and 115 from the college of Economics, Management, & Development Studies. The study respondents were faculty members from the selected state universities and private higher educational institutions in Cavite. They were the ones who had adequate knowledge to answer the questionnaire that the Researcher presented to them for the information needed.

Results and Discussions

Table 1 present the significant difference between the assessment of the two groups of respondents on the perceptions of using computer-based multimedia in instructional practice in terms of preparedness and incorporation.

Data reveals that with regard to the differences on the assessment among the groups of respondents on the perception in using computer-based multimedia, when subjected to one-way anova, Level of Preparedness in using Computer-based Multimedia in Classroom Instruction, obtained probability value below 0.05 which reject the null hypothesis. On the other hand, with respect to extent of incorporation of computer-based multimedia in classroom instruction, the obtain value also below 0.05 which reject the null hypothesis.

Findings showed that faculty from state universities and private higher education institutions have the different opinions about their level of readiness and the extent to which computer-based multimedia is incorporated into their teaching methods.

According to the studies of Martin et. al. 2019, it shows significant differences in teaching online and delivery method for faculty perceptions of importance of online teaching competencies. Significant differences were also noted in years of teaching online and delivery method with respect to ability to teach online.

Table 1.

Significant Difference among State Universities and Private Higher Education Institution Faculty Perceptions in Terms of Preparedness and Incorporation of Using Computer-based Multimedia in Instructional Practice

Perceptions in Using Computer-based Multimedia in Instructional Practice in Among State University and Private Higher Institution	F- Stat	P - value	Decision	Verbal Interpretation
Level of Preparedness	5.9147	<0.001	Rejected	Significant
Extent of Incorporation	5.5352	<0.001	Rejected	Significant

Figure 1 Present the proposed framework for Computer-Based Multimedia for Selected State Universities and Private Higher Institution.

Faculty Preparedness in Using Computer-Based Multimedia

Computer-based multimedia have a significant effect on education, the preparedness in using computer-based multimedia and its applications must be designed by the faculty for classroom instruction. Computer-based multimedia technology requires understanding of how it is used in the classroom and what learning goals are held by the educators involved, knowledge about the type of assessment that are used to evaluate improvement in the student's achievement, and awareness of the complex nature of change in the school environment. The current emphasis is ensuring that computer-based multimedia is used effectively to create new opportunities for learning. It requires the assistance of

educators who integrate computer-based multimedia in their classroom instructions, and the faculty should be prepared for this integration.

Faculty Incorporation of Computer-Based Multimedia

To encourage faculty to use computer-based multimedia into their classroom education, computer-based multimedia resources should be better managed at the institutional level. Computer-based multimedia is used extensively by faculty in selected state university and private higher educational institution in Cavite. Their used of computer-based multimedia provide them numerous resources for teaching and learning, and the flexibility on delivering their lessons.

Kostolansky et al. (2019). The modernization of education and the introduction of new technologies are both effects of the current rapid development of information and communication technology. In the hands of aspiring teachers who possess the requisite theoretical and practical skills, multimedia as a contemporary technology that has invaded the traditional educational system can be a beneficial instrument. Using multimedia in the classroom allows the teacher to have a beneficial influence on both the students' learning and on the students themselves. As a result, multimedia education is currently on the rise as an essential component of training new teachers.

Figure 1:
Proposed Computer-Based Multimedia Framework for Selected State University
and Private Higher Institution
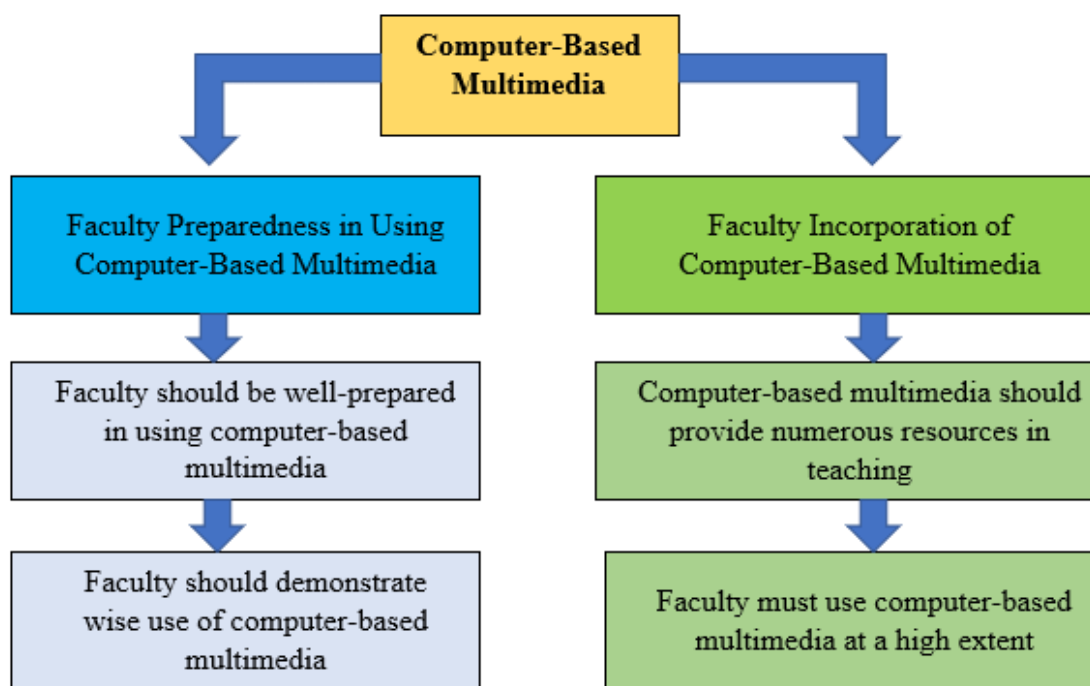
Conclusion

The responders to this study are really fully-prepared to use computer-based multimedia in their classroom education. They also demonstrated generally wise use of computer-based multimedia. Computer-based multimedia is used extensively in classroom instruction at a number of state universities and private higher educational institutions. This also indicates that instructors at private higher education institutions and state universities employed computer-based multimedia very effectively in the classroom. The faculty from state universities and private higher educational institution are really well-prepared in using computer-based multimedia in their classroom education.

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