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Development of an Inclusive Digital Platform Integrating Event Management, Assistive Communication, and Accessible E-Reading

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ABSTRACT:-

This research paper presents an inclusive digital platform integrating event management, assistive communication, and accessible e-reading into a single system. The platform is designed to support students, event organizers, and users with different accessibility requirements. It provides event registration, scheduling, notifications, digital communication, and e-reading facilities. Assistive communication can include alternative input methods such as Brain-Computer Interface (BCI) technologies. Accessible e-reading features such as text-to-speech, adjustable fonts, and easy navigation improve the reading experience. The proposed platform aims to promote accessibility, independent interaction, and digital inclusion in educational environments.

INTRODUCTION

In today's digital environment, educational institutions use various platforms for event management, communication, and digital learning. However, many systems are designed mainly for general users and may not provide sufficient accessibility for users with disabilities. This creates difficulties in communication, participation, and accessing educational content.

The proposed platform combines event management, assistive communication, and accessible e-reading into one integrated digital environment. The event module supports event creation, registration, scheduling, and notifications. The assistive communication module provides alternative interaction methods for users with physical disabilities.

The e-reading module provides digital books and educational materials with accessibility features such as text-to-speech, adjustable text size, and personalized reading settings. By combining these technologies, the platform can provide a more flexible and user-friendly experience.

The main objective of this research is to develop an inclusive digital platform that improves communication, event participation, and access to educational content. The study focuses on usability, accessibility, integration, and user-centered design.

Review Of Related Literature:-

Digital Event Management Systems:

Digital event management systems help educational institutions organize events, registrations, schedules, notifications, and participant information. Such systems reduce manual work and provide centralized access to event-related information. They also improve communication between organizers and participants.

Brain-Computer Interface for Assistive Communication

Brain-Computer Interface technology provides an alternative communication method for people with severe motor disabilities. BCI systems can process brain signals and convert detected intentions into computer commands. This technology can help users interact with digital systems without depending completely on traditional input devices.

Accessible E-Reading Systems

E-reading systems provide convenient access to books and educational materials through digital devices. Accessibility features such as text-to-speech, adjustable fonts, contrast settings, and simple navigation can support users with different needs. These features can make digital learning resources more accessible and personalized.

Inclusive Digital Platforms

Inclusive digital platforms focus on designing technology that can be used by people with different abilities. Combining assistive technologies with educational applications can reduce digital barriers and improve participation. The proposed research integrates these concepts into a unified platform.

METHODOLOGY & IMPLEMENTATION

A. Research Methodology

This research follows a qualitative and system-design approach for developing an inclusive digital platform. The proposed system consists of three major modules: event management, assistive communication, and accessible e-reading. The system is designed using user-centered and accessibility-focused principles. The modules are integrated to provide a common digital environment for different categories of users.

The development process includes requirement analysis, system design, interface development, module implementation, system integration, and testing. The proposed system can be evaluated based on usability, accessibility, functionality, communication efficiency, and overall user experience.

B. Data Collection

Data for this research can be collected from:

- Academic research papers on assistive technologies
- Research papers related to Brain-Computer Interfaces
- Studies on accessible e-reading systems
- Literature on digital event management
- Human-computer interaction research
- Accessibility standards and guidelines
- Technical documentation related to BCI systems
- User requirements and usability studies

These sources provide information about accessibility, system design, user interaction, assistive communication, and digital learning requirements.

CONCLUSION:-

The study concludes that integrating event management, assistive communication, and accessible e-reading can create a more inclusive digital platform for educational environments. The event management module improves event organization and participation, while assistive communication provides alternative interaction methods for users with physical disabilities.

The accessible e-reading module improves access to digital educational content through features such as text-to-speech, adjustable text, and personalized reading options. Combining these functionalities reduces the need for multiple independent applications and provides users with a unified digital experience.

The proposed platform can support digital inclusion, independent interaction, and improved educational participation. Future development may include Artificial Intelligence, advanced BCI signal processing, multilingual text-to-speech, voice control, personalized recommendations, and intelligent accessibility features.

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