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THE ROLE OF ARTIFICIAL INTELLIGENCE IN LIBRARIES AND IT'S ADVANTAGES AND DISADVANTAGES

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ABSTRACT:
From many years Assisted Instruction (AI) has used to bring the power of the computer system to stand on the educational process. Now a day instead of assisted instruction artificial intelligence methods was applied for the development of intelligent computer assisted instruction (ICAI) systems. It is an attempt to create computerized tutors. This tutors shape the teaching techniques to fit the learning patterns of individual students. The purpose of this research is to identify the variables that make up the essential prerequisites for implementing artificial intelligence (AI) in libraries.

INTRODUCTION:

Over the years, ICT and related technical developments have frequently led to important and instructive changes in library operations and services. By facilitating effective and efficient access to information, the library plays a crucial role in promoting scholarship inside the parent institution. In order to be relevant in its roles supporting research, teaching, and learning, the modern academic library has had difficulty keeping up with the numerous technological advancements that take place in the digital world. Stated differently, the rapid expansion of digital technology in libraries is leading to frequent changes in the way information services are delivered, mostly through automation.

in today's era application of Artificial Intelligence in library and information centers increases. It is necessary to identify an advantages and disadvantages of AI for the better use of this new technology. Artificial Intelligence has come a long way from its early roots, driven by dedicated researchers.

DEFINITIONS AND CONCEPTS:

The expression artificial intelligence was introduced as a 'digital' replacement for the analog 'cybernetics'. Artificial intelligence began as an experimental field with pioneers like George Boole (1815-1864), Allen Newell and Herbert Simon, who founded the first artificial intelligence laboratory (Kumar, 2004). Artificial intelligence (AI) is defined as intelligence exhibited by an artificial entity to solve complex problems and such a system is generally assumed to be a computer or machine.

HOW DOES AI WORK:

In general, AI systems work by ingesting large amounts of labeled training data, analyzing that data for correlations and patterns, and using these patterns to make predictions about future states.

For example, an AI chatbot that is fed examples of text can learn to generate lifelike exchanges with people, and an image recognition tool can learn to identify and describe objects in images by reviewing millions of examples. Generative AI techniques, which have advanced rapidly over the past few years, can create realistic text, images, music and other media.

Programming AI systems focuses on cognitive skills such as the following:

Learning. This aspect of AI programming involves acquiring data and creating rules, known as algorithms, to transform it into actionable information. These algorithms provide computing devices with step-by-step instructions for completing specific tasks.

Reasoning. This aspect involves choosing the right algorithm to reach a desired outcome.

Self-correction. This aspect involves algorithms continuously learning and tuning themselves to provide the most accurate results possible.

Creativity. This aspect uses neural networks, rule-based systems, statistical methods and other AI techniques to generate new images, text, music, ideas and so on.

WHY IS AI IMPORTANT:

AI is important for its potential to change how we live, work and play. It has been effectively used in business to automate tasks traditionally done by humans, including customer service, lead generation, fraud detection and quality control.

In a number of areas, AI can perform tasks more efficiently and accurately than humans. It is especially useful for repetitive, detail-oriented tasks such as analyzing large numbers of legal documents to ensure relevant fields are properly filled in. AI's ability to process massive data sets gives enterprises insights into their operations they might not otherwise have noticed. The rapidly expanding array of generative AI tools is also becoming important in fields ranging from education to marketing to product design.

Advances in AI techniques have not only helped fuel an explosion in efficiency, but also opened the door to entirely new business opportunities for some larger enterprises.

THE IMPACT OF AI ON LIBRARY OPERATIONS & SERVICES MANIFESTS ITSELF IN THE FOLLOWING WAY:

Enhanced search and discovery:

In addition to real-time question resolution and personalized, responsive customer support, an AI-powered system may help users find relevant resources more quickly and conveniently by evaluating user search behavior, identifying search patterns, and suggesting resources that may be of interest to users.

Collection Management: AI can help in the selection and acquisition of library resources by analyzing usage data, identifying popular items, and predicting future demand, allowing the library to make more informed decisions about which resources to purchase while also allocating fund more efficiently.

Processing and organizing library resources: AI facilitates the cataloging and classification of library items, lowering the time and effort required to handle and arrange collections.

Inclusive Information Accessibility: By offering automatic translations, alternative text and audio descriptions, and other assistive technology, artificial intelligence (AI) makes it possible for more people, especially those with disabilities, to have more inclusive access to information and services.

Preservation of Resources: AI can digitize and preserve library items, lowering the risk of loss or damage to physical documents and making them more publicly available and usable in the future.

Data Analysis: AI can be used to evaluate library data such as circulation statistics, user activity, and resource utilization to detect patterns and generate insights that can help with decision-making and service enhancement.

AIDING CONDITIONS FOR THE ADOPTION OF AI TOOLS IN LIBRARIES:

Certain conditions are instrumental to the successful adoption of AI tools in libraries, such as:

1. **Adequate Planning:** A library that wishes to adopt AI tools should properly plan and prepare for it. They should form an AI team of Librarians with the needed skills, a technical section and have a laid down plan to achieve a favourable result. They should also make available a working software and have every equipment or machine needed in place for this purpose. Adopting AI tools isn't something that is simple to achieve and as such with a proper planning and preparation, success can be achieved.
2. **Availability of needed Resources:** Without the required resources made promptly available, a library that wishes to adopt AI tools will suffer a lot of lapses. This is because when the resources needed for a particular purpose are unavailable then, that purpose cannot be actualized.
3. **Cooperation of Institutions or Organizations Management:** The library needs the cooperation of its institution or organization's management to achieve a dream as big as adopting AI tools. It is important that they get things right with the help and cooperation of their institution or organisation.
4. **Sufficient Funds:** It is important to note that the adoption and appropriation of AI tools is a big project that requires a lot of funds to be successfully achieved. Therefore, the availability of sufficient funds is a facilitating condition for the adoption of AI tools in libraries.
5. **Availability of Needed Technology:** It is the duty of the technical section of the AI team created for the purpose of adopting AI tools to ensure that the needed technology equipment, resources, and advice are made available with the necessary financing. This would be very instrumental to the successful adoption of AI tools in libraries.
6. **Equipping Library Staff with ICT Skills**: According to Nwosu & Obiano (2021) there are situations whereby academic librarians are not equipped with up-to-date ICT skills that will ensure the effective and efficient rendering of virtual services. This creates room for

shortfalls in the appropriation of AI tools. Therefore, ensuring that Librarians are well equipped with the needed ICT skills is important for the adoption of AI tools.

7. **An up to date/working ICT unit of the library:** For AI tools to be adopted, the library must have a functional ICT unit. This is because the ICT facilities will be used to activate or make the AI tools operative. According to Nwosu & Obiano (2021), there is a problem with the dearth of purpose-built library buildings since some academic libraries include areas dedicated to information and communication technology (ICT), while others do not. The adoption of AI tools may be hampered by this.

ADVANTAGES AND DISADVANTAGES OF ARTIFICIAL INTELLIGENCE:

The fact that artificial intelligence makes decisions based on facts rather than feelings is one of its main advantages. It is common knowledge that human emotions always have a detrimental impact on our decisions, regardless of how hard we try.

Advantages of Artificial Intelligence (AI)

The benefits of artificial intelligence are incredible, what this area can offer us, is to evolve definitively and move on to the history of artificial robots. Following are the main advantages of Artificial Intelligence (AI).

1. finished a task more quickly than a human,
2. handled complex and stressful labor with ease,
3. completed challenging work quickly,
4. Multiple tasks can be completed simultaneously,
5. A high success ratio,
6. A decrease in task mistakes and faults,
7. Greater effectiveness in less time,
8. Reduce size and space;
9. Compute complex and long-term scenarios; and
10. Find uncharted territory. For example, space.

Disadvantages of Artificial Intelligence (AI)

Some of the main disadvantages of Artificial Intelligence (AI) in our daily lives are as follows.

1. It can occasionally be abused, resulting in large-scale destruction.
2. Programs can occasionally be written against instructions.
3. Human jobs are impacted.
4. The unemployment rate rises.
5. Creativity is dependent on programmers.
6. Lacks a human touch.
7. The younger generation becomes lazy.
8. Requires a lot of time and money.
9. Technological dependency increases.

CHALLENGER OF IMPLEMENTING ARTIFICIAL INTELLIGENCE IN LIBRARIES:

The majority of libraries do not now employ artificial intelligence technologies. The following are some of the restrictions on the use of AI systems in libraries:

1. Lack of technical know-how to use and operate artificial intelligence systems among the library staff.
2. Lack of adequate funding to develop or procure artificial intelligence systems in libraries. Since the budgets for hardware and software are frequently tight, there's always constrain to the type of system the library can purchase or develop.
3. High system development and maintenance cost of artificial intelligence systems in libraries.
4. Erratic power supply to power artificial intelligence systems in libraries especially in developing countries.
5. Inherent complexities of expert/artificial intelligence systems' development.
6. Limited natural language capabilities.
7. Intelligent systems lack that common base of human knowledge, severely constraining the types of functions that they can perform.
8. Level of effort and technical expertise needed to create artificial intelligence systems in libraries. The level and nature of effort that must be invested to develop an intelligent library system is directly proportional to the power and complexity of the system. This implies that, the more intelligent the system is, the more the effort that must be invested therein. Currently, the required skilled personnel with expensive development tools or techniques, needed to develop sophisticated intelligent system in libraries are lacking or costly, hence, the lack of such systems in libraries.
9. Limited amount of artificial intelligence experts among library automation vendors. The field of artificial intelligence is complex and thus, requires a specialised knowledge in that aspect far beyond the development of conventional.

CONCLUSIONS:

AI will eventually allow for additional features to meet the information needs of library patrons. AI tools can be used by libraries to offer more than just information. Understanding artificial intelligence's benefits and drawbacks is essential for improving user experience and implementing it in libraries and information centers. Information professionals will be able to leverage these innovative new technologies to improve their services and assist users in finding and accessing specific information more quickly and simply. Artificial Intelligence is changing how information is handled and looked for. The creation of an effective expert system for technical services as well as information processing and management will assist libraries and information centers.

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