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INTEGRATION OF ICT AND ARTIFICIAL INTELLIGENCE IN LIBRARY AND INFORMATION SCIENCE

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LIBRARY AND INFORMATION SCIENCE

ABSTRACT

The paper covers the paradigm shift from the delayed guide as well as journal print info services to quick products including open access as well as institutional repositories for scholarly planet as well as effect of the groundbreaking inventions. With introducing as well as building AI logic, this science as a department of computer science may influence as well as enhance all sciences which used computer systems. Information, as well as library Science (LIS) likewise, might get gain from AI in so many places. This particular paper survey applications of AI on info and library science and cause the possibility of the library system to use AI strategies. The study has supplied an insight to meet the changing requirements of owners by learning ICT skills/competencies in the digital era. In totality, the results offer to focus on the basic need for ICT ability for effective delivery of library services for the betterment of the library like an entire. This particular current study is going to help the authorities of the Faculty to incorporate courses in ICT abilities in the academic/professional curriculum which would assist the working LIS professionals to be proficient in several abilities.

I. INTRODUCTION

The accessibility of info that is right at the proper time and in the proper form is very important to owners for the understanding of theirs as well as developmental tasks. Developments in Communication and Information Technology (lCT) have significantly transformed the approaches of information control. ICT might be some blend of equipment plus methods which facilitate the generation, viewing, searching, retrieval, organisation, storage, acquisition, updating and transmission of info using electrical means. The resources used in ICT include design methods, analysis, communication networks, databases, and computer programs, knowledge bases, artificial intelligence, programming languages, etcetera. ICT has long standing impact on nearly all aspects of human activity. Over the previous 2 years, libraries are becoming more and more conscious of the groundbreaking effect of innovations in communication and info technology on the key tasks of theirs. The application of ICT facilitates instantaneous and easy entry to info. It offers opportunities for libraries as well as info centres in order to widen the scope of their services and energy as well as to increase the significance of theirs to the business they work. The increasing accessibility of info in machine-readable form provides numerous information to be

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pleased with reduced involvement libraries and librarians.

Now with the creation of the computer as well as fifty years of investigation into AI programming methods, the fantasy of sensible libraries is turning into a reality. Scientists are producing systems that could mimic librarian thought as well as the action which never before was achievable. The fundamental difficulty in this particular analysis was the state of library growth in the usage of AI in the area of public services, specialized services, and management services.

II. MEANING OF ARTIFICIAL INTELLIGENCE (AI)

AI will be the science as well as engineering of making smart devices, particularly clever computer programs. It's Worried about the analysis as well as development of computer systems which display some type of intelligence: system that learn jobs and ideas brand new, systems which can explanation & draw helpful conclusions about the earth around us, systems which can comprehend an all-natural language or even view as well as fully grasp a visual scene, as well as systems which carry out some other kinds of feat that need human Intelligence types.

It's the Application of Utilization and Computer of computer-based services and products of the overall performance of various library operations and capabilities and in the prevision of different services as well as production of paper solutions. Automation implies amount of mechanization in which the routines as well as receptive work or maybe operation are actually left to be carried out by devices with very little or maybe no intervention by individuals. Lesser the amount of human intervention, greater the degree of automation that doesn't imply that automation does away with human beings. On the contrary human being sari relieved of regular chores offering them more hours for task which involve the intelligence of theirs.

III. ICT IN LIBRARIES

The quick technological growth has impacted every facet of library operations as well as services. Computers have, in ways that are different, influenced acquisition of documents, management of serials, circulation system, preparation of bibliographical command equipment, and services like Reference, Circulation, Inter library loan, automating and data of good deal of library operations. Automation tasks in unique, research, academic libraries as well as faculty are enhanced. Many LIS experts are actually using Machine, LAN, CD-ROMs, and e-mails Readable Catalogue for resource sharing.

The on line searching of remote databases is now possible due to convergence of computer systems as well as communication technologies. CD-ROM technology has enabled libraries as well as info centers for storing & retrieving large amounts of data. Further forward, optical disc storage space technology coupled with high quality laser beam printing unit offer capability for saving big quantities of

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graphic and textual data with facility for immediate access to reputation as well as voice display and reproduction. This particular capability has had far-reaching implications for resource sharing in addition to assistance as a more affordable option for databases usually available through on line networks. The situation is actually changing quickly with the application of IT in the libraries. Networking of computer systems at the local, international and national level makes this possible. Compilation development poses to be another challenge for the info professionals. The primary task of the LIS professionals is actually providing info that is relevant to users as fast as you possibly can. Fast retrieval of info is really important for info professionals. Presently, LIS professionals are usually making use of computer based info retrieval, use of computer networks for accessing databases and organizing library services on networks.

IV. APPLICATION OF AI IN THE LIBRARY SYSTEM

ESs be made up of 2 primary elements: knowledge base as well as inference motor. Knowledge base is actually involving all info necessary which human/librarian pros are actually utilizing them to make choice. This info contained in knowledge base as rules as well as fact. ESs is able to get on far better choice than librarian choice makers since the knowledge base of theirs is able to involve encounters of staff of very best professionals. In order to fashion rules of knowledge base, the fashion of librarian professionals to generate choice is actually emulated. The rules are consisting 2 primary phases: If stage as well as then stage. In case stage is consisting problems as well as then stage is consisting outcomes. The one thing which distinguishes ESs from some other computer systems is actually inference motor. The inference motor simulates man choice makings based on the knowledge base as well as principle base.

A clear likely application of ES within libraries is designed for the selection of another vendor or book sellers of library materials carried to the logical conclusion of its, a system may well be put together to choose a seller automate honest according to performance that is previous of the source of publications of a certain style such a capability will be particularly beneficial in the acquisition of information which is less routineconference proceeding. Specific specialized report, publications in a few languages, publications from specific countries, and soon

Additional ESs, created to assist library user to satisfy their own needs of theirs, have additionally feature document orders tool. Systems are also created to the library group to assist in the buying process, systems of this particular kind were talked about by several of the researchers. The phrase "referral system", as used here, relates to systems which & are intended to refer library users to info sources likely to provide the solution to a specific issue of the factual of "information" sort to the library group even more work continues to

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be performed on system of this particular type than on another ES. The goal of such systems is actually obvious: to guide library users to a reference appropriate source every time a librarians unavailable to enable them to develop reference referral system cover information like an entire in the coverage of a broad reference library while some other are actually restricted to highly distinct domain

V. ARTIFICIAL INTELLIGENCE AND ICT ACCESSIBILITY

Common style is able to guarantee inequity is resolved and barriers are eliminated, for internet circumstances and actual physical ones. Internet cases could be net-based with pc user elements providing author produced content or perhaps can involve various kinds of software applications. AI coupled with deep learning or machine learning might improve as well as speed up the capability to foresee or even suggest accessible options with adapted systems. Nevertheless, the task generally involves a huge amount of data used to produce an unit through which an application could be constructed. This particular application offers the suggestions for a user, like a number of directions in which to travel to stay away from an unavailable access point. In this instance the practical use of the application depends on both the precision of the unit as well as the data giving a real image of the built environment and noting where prospective barriers exist. Precisely the same situation might be put on to info that is the internet with enhanced picture recognition being used to help short text descriptions of pictures or pictures.

Figure 1. AI challenges for ICT accessibility

VI. RESEARCH METHODOLOGY

A structured questionnaire was created as well as circulated among sixty LIS experts of studied university libraries in Faculty. All of the sixty filled in questionnaires (twenty Librarians, twenty Professional Assistants, and twenty Semi-Professional Assistants) had been collected and response rate was hundred per cent. For the evaluation as well as interpretation of data, all of the questionnaires had been selected. The reaction to thirty-five inquiries as well as 148 functions had been examined in the type of figures and tables.

VII. RESULTS AND DISCUSSION

Gender wise Distribution of Respondents

The demographic features of respondents were sought and responses are presented in Table 1.

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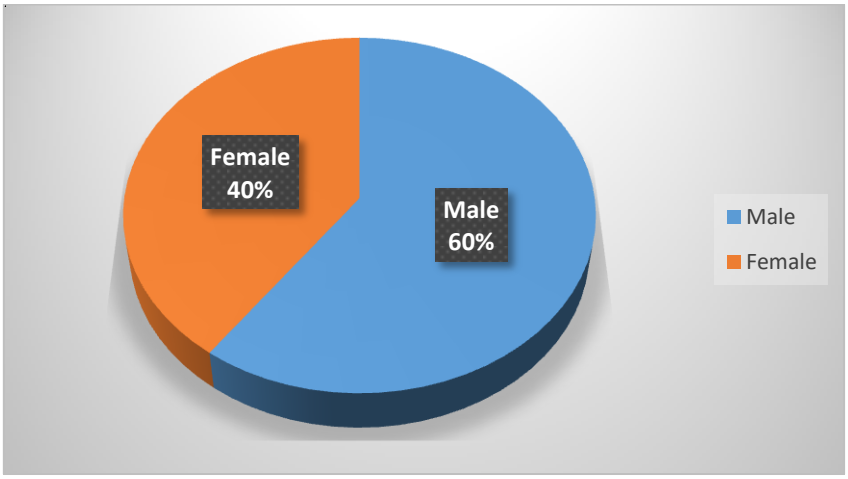
Table 1: Gender wise distribution (N= 60)

Gender	No of Respondents	Percentage %
Male	36	60.0
Female	24	40.0



It's obvious from table one, out of complete respondents 61.7 percent were men, and staying were females (38.3 per cent).

Since technology is actually changing unexpectedly and fast, it's vital for LIS professionals to acquire skills, expertise, competencies within ICT to function efficiently. However, there are ways that are different from which one may find out as well as develop ICT skills. A question with numerous options was directed to the respondents, as well as the similar outcomes are provided in Table three. It's apparent that majority of LIS professional (seventy percent) have selected workshop/seminars/conferences as probably the most ideal technique of obtaining ICT skills, while 68.3 percent of each respondent acquired ICT skills through colleagues/friends and self-study/trial and error.

Table 2: Methods of acquiring ICT skills

Particulars	No of Respondents
Workshop or seminar/conferences	42 (70%)
Colleagues/friends	41 (68.3%)

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Self-study/trial and error	41(68.3%)
Training by software suppliers	38 (63.3%)
Formal education (degree/diploma)	37 (61.7%)
On the job Training	32 (53.3%)
Web-based tutorial (YouTube, webinar)	29 (48.3%)
Orientation courses / Short Term Courses	26 (43.3%)
Refresher course	19 (31.7%)

The 63.3 percent received lessons by software suppliers, while 61.7 per cent received the formal training, followed by on the job training by 53.3 percent respondents. The dependency on Refresher course have been ranked least (31.7 percent). It's obvious from the table which- Positive Many Meanings- Workshop or maybe seminar/conferences got an advantage over others. A comparable analysis by Saka et al (2016) find out the methods by which librarians acquired types and skills of skills attained for individual growth as well as career advancement. Results showed the famous methods by which librarians acquire skills, through conferences, ongoing postgraduate programme, workshops, and workshops were additionally considered as the correct methods utilized to acquire skills by the respondents. On-the-job instruction wasn't considered as the ideal technique of the acquisition of skills while respondents seem never to make use of participatory management of the acquisition of skills. The results are actually similar whom investigated the info literacy skills of Librarians in College of Education (COE); the outcome of their investigation showed that vast majority of librarians acquired the skills of theirs through self-practice, colleagues and friends, workshop, workshops and conferences and through on the job training. Likewise, a study by Asemi as well as Safahief (2008), showed that the vast majority of librarians acquired the computer skills of theirs through casual channels. It's obvious from the findings which LIS professional with these techniques are able to acquire the ICT skills to cope with the challenges posed by ICT.

Web 2.0 tools support sharing, media and disseminating info with friends along with other professional organizations. Through web 2.0 tools LIS professionals are able to manage the material of theirs and also enhances services to deliver the subscribers more effectively & draw in possible users. You will find numerous applications of Web 2.0 tools for example blogs, wikis, instant messaging, social network websites, social bookmarking, academic social networking websites, streaming media, RSS feed, Podcasts, etc.

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In the analysis it is suggested that respondents require skills of the usage of internet chats, social networking, Web 2.0 / Web 3.0 tools as wikis, Blog, Social Networking Sites in teaching, research and learning.

Table 3: Web 2.0 Tools

Web 2.0 Tools	**No. of Respondents**				
	Excellent	**Good**	**Fair**	**Poor**	**Unknown**
Wikis	10(16.7)	25(41.7)	09(15.0)	03(5.0)	13(21.6)
Blogs	14(23.3)	23(38.3)	10(16.7)	04(6.7)	09(15.0)
RSS feeds	12(20.0)	14(23.3)	11(18.3)	07(11.7)	16(26.7)
Podcasts	08(13,3)	13(21.7)	12(20.0)	09(15.0)	18(30.0)
Instant Messaging	11(18.3)	27(45.0)	12(20.0)	01(1.7)	09(15.0)
Social Networking Sites	16(26.7)	30(50.0)	05(8.3)	00(0.0)	09(15.0)
Academic Networking Sites	14(23.3)	28(46.7)	11(18.3)	00(0.0)	07(11.7)
Social Bookmarking sites	09(15.0)	22(36.7)	11(18.3)	03(5.0)	15(25.0)
Streaming Media	06(10.0)	15(25.0)	09(15.0)	08(13.3)	22(36.7)

It's noticed from Table that fifty percent of LIS professional-rated SNS in the great category, followed by Academic media websites (46.7 percent), IM (forty-five percent), Wikis (41.7 percent), Blogs (38.3 percent), and Social bookmarking websites (36.7 percent). Surprisingly, 36.7 percent of LIS professionals are actually ignorant about Streaming press followed by Podcasts (thirty percent RSS and) feeds (26.7 percent).

VIII. CONCLUSION

The current study has supplied an understanding to determine the acquired ICT skills as well as competencies of LIS professionals in the studied college libraries. The results showed that the majority of the LIS professionals are actually computer literate and also have acquired the ability and knowledge to control the libraries. The LIS professionals have skills that are exceptional in automation, however, lack skills in ICT skills as well as competencies in the areas of surveillance, electronic security,

bibliographic standards, IR tools, and operating systems, cloud computing, Artificial Intelligence, Web 2.0 tools, Mobile based library services, etcetera. This mirrors that LIS professionals continue to have to acquire as well as enhance these skills in the areas mentioned above to provide efficient and effective services without wasting the time of the people which support the 4th law of the Ranganathan Save the time of the user. Low in advance ICT competencies as well as skills, the LIS professionals won't have the ability to deal with the challenges posed by ICT in technology that is the existing driven environment.

The LIS professionals must adjust to changes which demand skills as well as competencies to be able to make it through as well as stay relevant in this particular technology-driven alter era to offer good quality ICT based services to the user. The LIS professionals have to upgrade their competencies as well as skills on regular basis in continual changing technology environment.

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