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An Assessment of ICT Literacy Competencies’ among Teachers of Government First Grade Colleges in Shivamogga District In Karnataka

by

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Abstract:

The use of ICT tools and applications in the area of education is becoming increasingly prominent. The present study was conducted in the government first grade colleges in Shivamogga Dist., in Karnataka. The study is mainly focused on the computer and ICT skills of teachers, those who are directly involved in the area of teaching and research. The purpose of the study was to find out, if the teachers were computer and ICT literate and to examine if they employ computers and ICT in their teaching activities. Total Eighty copies of a self-designed questionnaire were administered to teachers in degree colleges, out of which sixty eight was completed, returned and found usable. The study shows that the respondents are aware of the fact that being computer and ICT literate is very important in their profession. The paper concludes that the Higher Education authorities’ should periodically provide necessary computer and ICT training to the teaching staff of degree colleges to enhance their ICT skills in order to making them to become updated, self and independent learner in the knowledge society.

Introduction:

Information and Communication Technology (ICT) is a term that has varies meanings. ICT refers to technology that provides access to information through telecommunications. ICT Literacy is about ability to use digital technology, communication tools and networks appropriately to solve information problem. The explosion of information and information products today means that users are increasingly unable to deal with the problem of information overload. In view of the present challenges and complexities of ICT, it is clear that college teachers will need to use ICT to fulfill their professional responsibilities in the changing scenario.
Purpose of the Study:
This paper has the purpose of finding out if government first grade degree college teachers are computer and ICT literate and to examine if they employ the use of computers and ICT in their teaching activities.

Review of Literature:
Literature establishes that a number of studies have been conducted to explore needed ICT literacy competencies of teachers.

The main objective of information technology for teaching and learning according to Idowu (2001) is to facilitate a faster and better comprehension and appreciation of the subject matter in such a way as to obtain the maximum possible output from the teaching and learning process. Nwachukwu (2005) opined that with the changes in the forms, formats, and expressions of information, the process of access, storage, transmission and reproduction have witnessed new media technology, it is therefore of paramount importance for teachers to adapt themselves to new roles and skills in order to cope with the impending changes. Satharasinghe (2003) posited that use of computers can revolutionize teaching and learning and could bring advances that would improve education dramatically;

Mutula and Mutula(2007) asserted that there is a digital divide which refers to the widening imbalance of access to ICT’s between communities and countries which creates an imbalance for equitable access to quality education in an electronic age. They further opined that schools are being seen as very important institutions for bridging the digital divide in society because they represent focal points where many children from different communities converge for learning purposes. Though Servon (2002) argued that the technology gap should not be defined narrowly as a problem of access. Training and content, should be included as other dimensions of the digital divide so that policy makers and programs to narrow the digital divide would not lose their focus. It is therefore of paramount importance for teacher preparatory institutions to aim at developing in teachers ICT pedagogical competencies that will ensure that these teachers help the country to cross over to the positive side of the digital divide and keep pace on the information superhighway (Akudolu, 2002).

Adebayo(2008) asserted that the functions of teaching in education process is considered paramount especially when we consider teaching and learning process as the acquisition of knowledge and skills by individuals to enable him become useful member of the society.
Teachers are the primary agents of educational innovation therefore; ICT skills among Government first grade degree college teachers should be seen as an invaluable prerequisite that would help facilitate the teaching and learning procedure in this modern age of information explosion.

Jegede (2008) opined that ICT is now recognized as an essential ingredient for creating 21st century learning environment but Lau and Sim (2008) reported that despite the apparent benefits of the use of ICT for educational purpose, studies showed that in many cases, the learning potential of ICT is deprived as many teachers are still not fully ICT literate.

Organizations of all types and sizes, including schools, have recognized that the usage of computers in the work environment is important as it presents with unprecedented challenges that helps individuals to acquire an inquiring, critical and creative mind to capitalize on the opportunities driven by the explosive growth of information, knowledge and technology. (Kumar, Rose and D'Silva, 2008).

Today, improved communication technology has made time and space less complex. It could be observed that this modern age is the age of information explosion in which an average individual wants to explore the information system. Thus, the ability for timely acquisition, utilization, communication and retrieval of relevant and accurate information has become an important attribute for better teaching-learning process (Adebayo, 2008)

Lawal(2009) opined that the use of technology, and knowing how technology can support student learning have become essential skills for professional teachers in today’s world.

**Research Methodology:**

The survey research method was used in investigating the computer and ICT skills of the Government first grade degree college teachers in Shivamogga District in Karnataka. Specifically, a questionnaire was designed and distributed to targeted audience who are teachers in government degree colleges in Shivamogga District in Karnataka. Eighty copies of the questionnaire were distributed among the teachers. Sixty eight copies of the questionnaire were completed, returned and found usable.
Data Presentation, Analysis, and Discussion

Out of the 80 copies of the questionnaire distributed to the respondents, 68 (85%) were completed, returned and found useable for the purpose of this analysis. The age bracket of the respondents was, 19-24 (1.47%) and then 25-30 (41.17%) while 31-35 (19.12%), 36-40 (19.12%) and 41-45 (19.12%). A higher number of female 36 (52.94%) as against 32 (47.06%) males, constitute the study’s respondents.

Table 1. Distribution of Respondents by Year of Teaching Experience

<table>
<thead>
<tr>
<th>Sl No</th>
<th>Range of Teaching Experience</th>
<th>Respondents</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-5 Years</td>
<td>33</td>
<td>48.52%</td>
</tr>
<tr>
<td>2</td>
<td>6-10 Years</td>
<td>18</td>
<td>26.47%</td>
</tr>
<tr>
<td>3</td>
<td>11-15 Years</td>
<td>12</td>
<td>17.65%</td>
</tr>
<tr>
<td>4</td>
<td>Above 20 Years</td>
<td>05</td>
<td>7.36%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>68</td>
<td>100%</td>
</tr>
</tbody>
</table>

From the table above, the teachers from 1 – 5 years had the highest number of respondents (48.52%) while teachers between 6 – 10 years (26.47%), 11 – 15 years (17.65) and 20 years above (7.36%) respectively.

Table 2: Distribution of Respondents by Qualification

<table>
<thead>
<tr>
<th>Qualification</th>
<th>Respondents</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>11</td>
<td>16.18%</td>
</tr>
<tr>
<td>M.Phil</td>
<td>33</td>
<td>48.53%</td>
</tr>
<tr>
<td>M.Sc.</td>
<td>11</td>
<td>16.18%</td>
</tr>
<tr>
<td>PhD</td>
<td>05</td>
<td>7.35%</td>
</tr>
<tr>
<td>Others</td>
<td>08</td>
<td>11.76%</td>
</tr>
</tbody>
</table>

The table shows the level of education of the respondents MA (16.18%), M.Phil had the highest (48.53%) while M.Sc.had (16.18%) PhD had (7.35%) and other qualifications such as B.Ed/M Ed. /LLM had 8 respondents (11.76%), respectively.
Table 3: Research Questions

<table>
<thead>
<tr>
<th>As a teacher, have you ever</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>56</td>
<td>82.36</td>
</tr>
<tr>
<td>No</td>
<td>12</td>
<td>17.64</td>
</tr>
</tbody>
</table>

The table above reveals that (82.35%) respondents have received computer training while (17.64) have not received any computer training. It is very important for teachers to continuously retrain themselves and acquire new skills so as to maintain relevance in their job. Modern developments of innovative technologies have provided new possibilities to teaching professions, but at the same time have placed more demands on teachers to learn how to use these new technologies in their teaching (Robinson & Latchem, 2003). Roberts (2000) opined that even if all the technology in the world is made available, and there is no investments in teachers that will help to them acquire the comfort and know-how, it will be wasted. There is a need to find ways to help teachers be competent, confident and creative users of technology because teachers tend to integrate ICT in their teaching if they experience ICT skills as a learner (Collis & Jung, 2003)

Table 4: Certification in Computer programs

<table>
<thead>
<tr>
<th>Computer Programs</th>
<th>Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Certification in Computer Appreciation</td>
<td>19</td>
<td>27.94</td>
</tr>
<tr>
<td>Diploma in Computer Appreciation</td>
<td>13</td>
<td>19.12</td>
</tr>
<tr>
<td>Certificate in Microsoft Office Suit (MS word, MS Excel, MS power point, MS access)</td>
<td>18</td>
<td>26.47</td>
</tr>
<tr>
<td>Internet Explorer</td>
<td>1</td>
<td>1.47</td>
</tr>
<tr>
<td>Others</td>
<td>17</td>
<td>25</td>
</tr>
</tbody>
</table>

The table above clearly indicates that respondents who had certification in computer appreciation are 19 representing 27.94%, Diploma in Computer Appreciation 13 representing 19.12%, Certificate in Microsoft Office Suit (MS word, MS Excel, MS power point, MS access) 18 representing 26.47%, Internet Explorer 1 representing 1.47% and other programs such as short term training programs and Diploma in Computer Application had 17 respondents representing 25% respectively. This is an excellent development because it shows that the teachers have built capacity in the area of training on various computer packages though the teachers scored
so low in the parameter of internet explorer. This is in line with the suggestion of Idowu (2001) that teachers should be given attention in terms of seminars, workshops, conferences on latest developments on information technology. He further reiterated that teachers should not only be computer literate but should be empowered to have access to computers and other devices so as to keep abreast of current findings and research activities.

**Table 5: interest in developing computer and ICT skills**

<table>
<thead>
<tr>
<th>Willingness to Develop Computer and ICT skills</th>
<th>Respondents</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>64</td>
<td>94.11%</td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td>1.47%</td>
</tr>
<tr>
<td>Undecided</td>
<td>3</td>
<td>4.42%</td>
</tr>
</tbody>
</table>

This table clearly indicates that sixty four (64) respondents representing 94.11% were ready and willing to develop their computer and ICT skills. This is an excellent indication that if given the necessary support by either the government or the parent body of their schools, they will acquire necessary computer and ICT skills that is required to take their profession to a new level.

**Table 6: Respondents frequent use of computer**

<table>
<thead>
<tr>
<th>ITEMS</th>
<th>RESPONDENTS</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Once a week</td>
<td>3</td>
<td>4.42%</td>
</tr>
<tr>
<td>Twice a week</td>
<td>9</td>
<td>13.24%</td>
</tr>
<tr>
<td>Once a month</td>
<td>15</td>
<td>22.06%</td>
</tr>
<tr>
<td>Not at all</td>
<td>7</td>
<td>10.29%</td>
</tr>
<tr>
<td>Daily</td>
<td>31</td>
<td>45.58%</td>
</tr>
<tr>
<td>Undecided</td>
<td>3</td>
<td>4.41%</td>
</tr>
</tbody>
</table>

According to the results, (4.42%) of respondents uses computer once a week, (13.24%) of respondents twice a week, (22.06%) respondents once a month, 10.29% not at all, daily (45.58%) and undecided (4.41%). This may be due to the fact that the colleges in which these teachers find themselves do not have computers needless to talk about having internet connectivity. Their interaction with computers seems to be at a personal level; that is either using personal PCs or going to cyber cafes to make use of the internet. Hennessy, Ruthven and Brindley (2005) stated that despite a great deal of recent progress and optimism that many more learners can benefit from access to ICT, the infrastructures
necessary for deploying technological resources are lacking in low-income countries. Furthermore, many teachers are working in conditions that are not conducive to supporting ICT use.

Table 7: Respondents surf of the internet when preparing lesson note

<table>
<thead>
<tr>
<th>Surf of Internet</th>
<th>Responded</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>35</td>
<td>51.47%</td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>42.65%</td>
</tr>
<tr>
<td>Undecided</td>
<td>4</td>
<td>5.88%</td>
</tr>
</tbody>
</table>

According to the results, 51.47% of respondents surf the internet when preparing for lesson note while 42.65% don’t surf internet and 5.88% undecided respectively. A fairly large population of the respondents do not surf the internet while preparing lesson notes. The implication of this is that they will not be in touch with what their counterparts all over the world and they may also not have firsthand information on current trends and best practices in their profession and method of teaching. Overall, the results are consistent with the findings of Slouti & Barton (2007) who concluded that, word-processing, power Point and Internet tools were most commonly used computer applications by teachers.

Table 8: Respondents use of spreadsheet package in preparing student results

<table>
<thead>
<tr>
<th>Use of Spreadsheet</th>
<th>Responded</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>34</td>
<td>50%</td>
</tr>
<tr>
<td>No</td>
<td>29</td>
<td>42.65%</td>
</tr>
<tr>
<td>Undecided</td>
<td>5</td>
<td>7.35%</td>
</tr>
</tbody>
</table>

The table above indicates that 50% of respondents uses spreadsheet package in preparing student results, 42.65% don’t use, this lack of usage may be due to the fact that spreadsheets are normally used by teachers to manage student grades and results and not for everyday use, therefore, 7.35 respondents were undecided. Sixty five percent of teachers have ever used both spreadsheets this shows that the respondents are competing almost on the same footing with their counterparts in other parts of the world. Spreadsheets are normally used by teachers to manage student grades and results.
Table 9: Opinions of respondents about ICT Skills

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Items Description</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
<th>Undecided</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Training in computers and ICTs skills is useful</td>
<td>61 (89.70%)</td>
<td>5 (7.36%)</td>
<td>0 (0%)</td>
<td>1 (1.47%)</td>
<td>1 (1.47%)</td>
<td>68 (100%)</td>
</tr>
<tr>
<td>2</td>
<td>Computer and ICT skills are not needed in my Profession</td>
<td>2 (2.94%)</td>
<td>2 (2.94%)</td>
<td>13 (19.12%)</td>
<td>50 (73.53%)</td>
<td>1 (1.47%)</td>
<td>68 (100%)</td>
</tr>
<tr>
<td>3</td>
<td>I really want to know about computer and ICT but don’t have the time</td>
<td>5 (7.36%)</td>
<td>18 (26.47%)</td>
<td>22 (32.35%)</td>
<td>22 (32.35%)</td>
<td>1 (1.47%)</td>
<td>68 (100%)</td>
</tr>
<tr>
<td>4</td>
<td>Programs don’t exist for such training in my College</td>
<td>10 (14.71%)</td>
<td>14 (20.60%)</td>
<td>11 (16.17%)</td>
<td>31 (45.58%)</td>
<td>2 (2.94%)</td>
<td>68 (100%)</td>
</tr>
</tbody>
</table>

From the table above, it can be deduced that respondents have positive attitudes towards computer and ICT skills; 61 respondents representing 89.70% strongly agree that computer and ICT training is very important and useful, 73.53% of the respondents were strongly disagreeing that computer and ICT skills are not needed in their profession, on the other hand 32.35% strongly disagrees with not having time to acquire necessary skills on a computer and ICT while 45.58% also strongly disagrees with their colleges not having programs for training teacher’s relevant skills in computer and ICT. It is clear from the table above that teacher recognizing the fact that computer and ICT skills are very relevant to their profession most especially this 21st century where millions of information exist on the web. It will be a serious setback if they cannot access or utilize information that is at their disposal. (Akudolu, 2006).
Conclusion:

It has been found from the study that majority of the teachers working in the Govt. First grade colleges are computer and ICT literate. The authors suggest that the Higher Education Department of Karnataka Government and MHRD, Govt. of India should ensure that Information and Communication Technology training are included in the curriculum of graduate courses. Good ICT infrastructural facilities should be provided in each college. Majority of information sources are available in electronic formats in the 21st century therefore, in order to use them effectively, one should be a computer and ICT literate, library professionals have a major role to play in educating the library users to become ICT literate, which helps the individuals to become lifelong independent learners in the society.

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Open educational resources in academic libraries
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ABSTRACT:

Open education is a philosophy about the way people should produce, share, and build on knowledge. Proponents of open education believe everyone in the world should have access to high-quality educational experiences and resources, and they work to eliminate barriers to this goal. Such barriers might include high monetary costs, outdated or obsolete materials, and legal mechanisms that prevent collaboration among scholars and educators. Promoting collaboration is central to open education. As the Open Education Consortium says: "sharing is probably the most basic characteristic of education: education is sharing knowledge, insights and information with others, upon which new knowledge, skills, ideas and understanding can be built."

Academic library budgets are contracting while library usage is increasing. How can academic libraries best help campuses reduce costs and better serve their communities? One strategy is collecting campus-created content online and making it available through the campus Institutional Repository. All faculty, including tenure track and adjuncts, at California State University San Marcos were invited to participate in a brief Web-based survey with both quantitative and qualitative questions. With an 18% response rate, the survey results indicate a strong interest in free or reduced cost educational materials, as well as a high level of concern about the cost of educational materials. Faculty responses indicate they are looking for alternatives to high priced curriculum materials, and are looking to the library for assistance. The crisis in scholarly communication and educational budgets is coming together to create a surge of support for free or low cost educational resources. Many campuses across the country have created programs to support open educational resources, with the main push coming from campus libraries or librarians. The data from this survey and examination of current campus climate, combined with the analysis of implementation factors by other organizations, will bolster the argument for libraries to create open repositories for campus scholarship.

Keywords:-
Scholarly Communications; Open Scholarship; Alternative Educational Materials; Open Access; Open Educational Resources; Institutional Repositories
**Meaning:** Open Educational Resources (OER) are freely accessible, openly licensed documents and media that are useful for teaching, learning, and assessing as well as for research purposes. It is the leading trend in distance education/open and distance learning domain as a consequence of the openness movement. Although some people consider the use of an open file format to be an essential characteristic of OER, this is not a universally acknowledged requirement.

The development and promotion of open educational resources is often motivated by a desire to curb the commoditization of knowledge and provide an alternate or enhanced educational paradigm

**Definition:**

The Organization for Economic Co-operation and Development (OECD) defines OER as: "Digitized materials offered freely and openly for educators, students, and self-leaners to use and reuse for teaching, learning, and research. OER includes learning content, software tools to develop, use, and distribute content, and implementation resources such as open licenses".

The term was firstly coined at UNESCO’s 2002 Forum on Open Courseware and designates "Teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released under an open license that permits no-cost access, use, adaptation and redistribution by others with no or limited restrictions. Open licensing is built within the existing framework of intellectual property rights as defined by relevant international conventions and respects the authorship of the work".

**What are open educational resources?**

Open educational resources (OERs) are learning materials that can be modified and enhanced because their creators have given others permission to do so. The individuals or organizations that create OERs—which can include materials like presentation slides, podcasts, syllabi, images, lesson plans, lecture videos, maps, worksheets, and even entire textbooks—waive some (if not all) of the copyright associated with their works, typically via legal tools like Creative Commons licenses, so others can freely access, reuse, translate, and modify them.

**Why are open educational resources beneficial?**

Applying open licenses to educational materials allows educators to collaborate when building materials specifically differentiated for their students. For example, a mathematics teacher might acquire openly-licensed word problems for her students, but re-write the exercises to include language that is more geographically specific or demographically relevant. In turn, she can share her modified problems with others who may wish to use them. At the
same time, collaborating on OERs allows educators to work together when ensuring consistency among their materials. Public school teachers in the United States, for instance, may wish to share resources they’ve developed in order to adhere to government-mandated educational standards, like the Common Core State Standards. Some educators suggest that OERs might help reduce costs associated with producing and distributing course materials in both primary and secondary educational institutions. Teachers can download these materials—often at low costs—for use in their classrooms, but they can also update these materials and share their contributions with others, keeping content timely, relevant, and accurate. In this way, they needn’t wait for textbook companies to issue entirely new editions of their (traditionally copyrighted) learning materials. Students also benefit from open educational resources when they access these materials to supplement the education they might receive in a classroom. Some students do not have access to a high-quality education, but using OERs affords them opportunities to enhance their knowledge independently—in spite of the barriers preventing them from acquiring the knowledge and skills they seek. Open educational resources are most useful when educators distribute them in open formats, so teachers and students can use those resources regardless of the particular technical platforms their schools have adopted. Projects like the OER Commons act as repositories for high-quality open educational resources.

**Academic Library Open Access Initiatives**

Academic libraries are positioned to be at the forefront of the open access revolution. Numerous trends towards open access publication have emerged over the course of the past few years, confronting academic libraries with new challenges and presenting promising opportunities (Giarlo, 2005). The open access movement has turned to libraries as a haven for solutions. As published content grew more expensive and restricted, and the internet made the distribution of ideas relatively cheap and easy, avoiding the publisher as a "middle man", open access became an obvious option for libraries. Today libraries are becoming alternative publishers through institutional repositories (Cho, 2008).

Open access is especially important for research and academic libraries since all academic institutions are research-intensive and a library’s main mandate is to support the teaching, learning and research activities of their parent institutions. All three activities are research-based. Due to yearly budget cuts, inflation, and the high cost of journals and books, libraries failed to fulfil their parent organisations’ information needs fully and they keep on evolving to provide customer-focused services. Open access is the most recent undertaking to support institutional research activities by providing information cost and time effectively at the right time in the right
format. Open Access has numerous impacts on academic libraries: economic, technological, collection development and management, reference services, information literacy, and peer evaluation. Open access is a prerequisite to survive and thrive for academic libraries (Giarlo, 2005).

In Malaysia, academic libraries, especially university libraries are the pioneers of open access initiatives. These libraries have initiated innovative services to their researchers by creating open access institutional repositories (IRs) for a wider dissemination of scholarly literature by their own community members (Kiran & Yip Ping, 2009).

OA is a paradigm shift from the traditional model of scholarly communication to open access. It has a great impact on academic libraries. Due to a strong connection between open access and the mission of libraries, it is not surprising that libraries are involved in a wide range of Open Access-related activities (Swan & Chan, 2009, C). As a lead in the open access campaign, on September 1, 2009, the Digital Access to Scholarship at Harvard (DASH) was launched as a University-wide, open-access repository. More than 350 members of the Harvard research community, including over a third of the Faculty of Arts and Sciences, have jointly deposited hundreds of scholarly works in DASH (Harvard University Library, 2009). Since then open access is growing in leaps and bonds in academic libraries. A recently released guide from the Research Information Network acknowledges that in the very long term, open access may help to reduce the pressure on library budgets, but for the next three to five years at least, open access initiatives will continue to represent additional burdens on libraries, while the costs of running repositories, or paying publication fees, are not being offset by any significant reductions in subscription costs for scholarly journals (Information Today Europe news, 2010). Academic libraries have come up with three major open access initiatives: Online public access catalogue, Institutional repositories, and Open Access Journal Systems.

**OER in a user-producer context:**

When OER consists of textual content, copyright rules to an important extent define the level of resource openness. OER I and II, for example, can be implemented using the Creative Commons “no derivatives” licenses, whereas OER IV can be enforced by “share alike” licensing. In general, copyright licenses, however, only partially define the openness of the focal resource. Resource openness can also be constrained by trademarks, database rights, patents, and, for example, proprietary file formats. Content use may be facilitated by fair-use rules and constrained by cultural norms and, for example, liability and national security laws. Many OER initiatives have so far focused on content that can be effectively regulated using copyrights, and the complexities of openness have remained relatively invisible. In
particular, when OER is used to redistribute existing course content, which normally is adapted to local norms and laws, openness often appears to be a simple question about copyrights. In general, the focal OER is not a monolithic object, and it may consist of components that have different degrees of openness. Conceptually, OER can perhaps best be viewed as boundary infrastructures that enable knowledge-based collaboration across diverse groups of actors (Star 2010; Bowker and Star 1999). This heterogeneity has implications both for the creation and use of the resource. For example, the possibilities to remix resources and create effective learning paths depend on the granularity, modularity, configurability, and scale of the focal OER. When OER moves beyond simple resource library models, for example, when OER platforms support dynamic configuration and personalized assessment, the technical dimension of openness becomes important, including interoperability, standards and interfaces. From a pedagogical point of view, learning often requires guidance and scaffolding that helps the learner to proceed effectively and avoid sidetracks and cul-de-sacs.20 Such guidance can alternatively be viewed as a resource or as a constraint (Giddens 1984). A distinction between “open” and “closed” educational practices is therefore a complex issue both in theory and in practice In some cases it may be useful to explicitly restrict the openness of some components not only for the users but also for the producers. For example, the rapid growth of source code of the Linux open source operating system has been facilitated by strong social control of some key elements of the system. Although in open source projects the code is visible to all developers, not everyone is allowed to modify it. In the history of Linux, tight control of central elements has enabled rapid expansion of more peripheral elements, leading to very high rates of expansion in the overall functionality of the system (Tuomi 2001; 2002).

To simplify this complexity, in Figure 1 we depict three important domains that form the context of OER initiatives. First, the production of OER requires motivation, capability, and a resource base that is used in the production process. Second, the resource base that forms the context for production consists of tools, accumulated epistemic objects, as well as established communities with division of labour and rules that make collective effort possible. Third, the consumption or use of the produced OER generates knowledge and capabilities, and it can also produce further epistemic objects and tools. As consumption is in itself productive and the “consumers” of learning cannot readily be conceptualized as “sinks of knowledge,” we use the term “presumption” here. As the different models of learning require different degrees of heterogeneity, configurability and scale of the focal resource, we also single these out in the figure.
As Figure 1 highlights, openness of the focal resource makes sense only in a broader context that provides explicit and tacit rules that simultaneously constrain activity and make it possible. These rules encode substantial bodies of social knowledge and structure that gradually have evolved to address the needs of social life. To put it in very simple terms, these rules and structures define why learning and education make sense in a specific historical context. In the following section we therefore briefly outline this historical context, in an attempt to clarify why and whether OER could make sense in the educational systems of the future.

**OER and learning in the Knowledge Society:**

Each historical era creates a system of education that addresses its needs. The diffusion and impact of OER partly depends on whether it makes the current educational system more productive and effective. OER, however, can also be a transformative force. It can help current educational institutions to adapt to emerging new social requirements, and it can provide a breeding ground for qualitatively new systems of learning that emerge outside current institutional frameworks. The impact and future of OER therefore depends partly on how its evolutionary dynamic and its propensities and possibilities align with the requirements of current educational systems, and partly on how it allows these systems to respond to requirements of the post-industrial knowledge society. In the pre-industrial European society, the family and the immediate community were the focal points in education, and children were able to perceive and participate in almost all productive activities. As Dewey noted: “The supply of flour, of lumber, of foods, of building materials, of household furniture, even of metal ware, of
nails, hinges, hammers, etc., was in the immediate neighbourhood, in shops which were constantly open to inspection and often centers of neighborhood congregation. The entire industrial process stood revealed, from the production on the farm of raw Materials, till the finished article was actually put to use. (Dewey 1915, 23) In contrast to this transparent system of production, the industrial system created a complex division of labour and specialization, where the household lost its capability to provide vocational education and where specialized locations of learning had to be set up. The rapidly accelerating urbanization and migration, driven by the increasing role of factories as centers of work and earning, also generated unprecedented social diversity. In this process, the home, the workplace, community life, and the church lost many of their earlier functions in the educational system, and the school became a central institution in education. The industrial mode of production therefore did not only lead to a problem of transferring productive skills; it also generated important new requirements for education. First, the effective combination of human workers with machinery requires clocks, punctuality and tight coordination. Second, the splicing of productive activities into specialized tasks requires hierarchical control, coordination and obedience. Third, factory workers have to accept the fact that the motives and Meaning of productive tasks are increasingly unknown. Fourth – specifically after the introduction of scientific management methods in industry – the workers had to be able to read and write documents that defined work processes and standards.

He gradually increasing wealth, health, and leisure time, combined with rapidly increasing rates of literacy, also enabled people to search for new sources of meaning. As Inglis (1918, 373) noted in his extensive study on the aims and functions of education: “Factory labor has tended to reduce the economic activity of the worker to a level of deadening monotony where either development or enjoyment is reduced to lowest terms.” Formal education was thus also needed to compensate this decline in opportunities for personal development, as well as to provide the foundation for effective coordination, management, and collaboration of increasingly complex and diversified societies With some simplification, we can thus say that the modern educational system responds to four major societal needs. First, from a systemic point of view, education simplifies social complexity and increases its predictability (Luhmann 1995). Education has an important role in reproducing and creating social groups and social stratification. It generates social categories that collate large numbers of individuals in groups that can be represented by statistical numbers with prototypical characteristics, making planning and large-scale administration and thus the modern state possible (Webster 1995, chap. 4; Giddens 1985).

Second, as noted by Dewey and others, the industrial system requires specialized education of productive skills and also more general-purpose competences such as literacy and numeracy that make
efficient production possible. Literacy and numeracy, in particular, have been the key competences required by efficient coordination and control of productive processes in the industrial age. In advanced economies, the expansion of production and consumption has also been supported by the fact that schools have allowed parents to go to work outside the home.

Third, education also generates attitudes and knowledge that, beyond their effect of production, underlie political and cultural systems, and provide the foundation for the society. This is the “cultural transfer” and “enculturation” function of education. Education is required to make full social participation possible.

Fourth, modern education also aims at personal development. The importance of personal development and “the complete fulfilment of man, in all the richness of his personality” (as stated in the Learning To Be report by UNESCO in 1972), has been emphasized since the romantic image of individual became popular in the early 19th century (Taylor 1989). The four functions of social simplification, productivity, cultural transfer, and personal development are rather generic, and could be compared with the more learner-focused four pillars of learning defined by UNESCO (1996, chap. 2).

The way in which these functions are implemented, however, varies in different social, historical, cultural and techno-economic contexts. Education reduces social complexity; it increases the efficiency of productive processes; it generates socially shared systems of meaning that enable collective action and social development; and it facilitates individual development and realization of human potential. The ongoing transformation from the Industrial society towards the knowledge society profoundly changes the conditions for implementing these social functions and OER potentially plays an important role here. It is in this context where the potential impact of OER is most clearly visible.

Open Access Journal Systems/Journal Repositories

Open access journals are another major initiative towards open access. Open access can be achieved by launching open access journals or converting existing journals to open access. The best-known open Access software is the Open Journal System. Some open access journals charge a document management fee from authors (Abukutsa-Onyango, 2010). Open Access journals allow access to freely read, download, copy, distribute and print articles and other informational material. They are peer reviewed. Open Access to research journals and literature accelerates research and enriches education and knowledge sharing between more developed countries and less developed countries. Because of constantly rising costs, Open Access journals are more sustainable than non-open access journals. On Open Access, journal costs are likely to drop. Several libraries have launched Open Access journals, for example the University of Toronto’s Journal Hosting Service, the Canadian Online Journal of Queer Studies in Education; Clinical & Investigative Medicine is the official journal of the Canadian Society for Clinical Investigation, the
Increasingly Open Access is being embraced in developing countries, such as in Latin America, and in particular Brazil, where much of the national research literature is distributed through Open Access journal services. Two such resources are Bioline International, a Brazil-Canada initiative that assists publishers in developing countries, and SciELO (Scientific Electronic Library Online) that is a collaboration of publishers in Latin countries (Abdulrasak, 2009).

Open Access Journal Systems are now well established in developing countries. For example, Bioline International is a collection of over 70 OA journals published in 17 different countries; a Brazil/Canada non-profit initiative, established 1993. MedKnow Publications – a collection of 59 medical journals published on behalf of societies and associations, mainly in India (Abukutsa-Onyango, 2010).

In Africa South Africa, Kenya and Nigeria are taking a lead and action in its efforts to promote Open Access. The African Journal Archive is an integrated full-text electronic journal retrospective repository published in Africa, in the Sciences, Social Sciences and Humanities. It has currently 46 South African journals, which are searchable individually and provides immediate access to the PDF versions of 6 000+ full-text articles (Sabinet, 2011). The total number of Open Access journals continues to rise. As noted earlier there are now total 6463 journals in the Directory of Open Access Journals of which 2836 journals are searchable at article level and there are almost 600,000 articles. In developing countries, Brazil is on lead with 587 e-journals, followed by India (312), Japan (105), and South Africa (36) (DOAJ b, 2011).

**Barriers to Open Access in Developing Countries**

In spite of various benefits, developing countries' road to OA has not been smooth. OA confronts developing countries with a variety of challenges and barriers, such as:

- Internet and information and communication technologies (ICTs): In developing countries, due to the high cost of availability of ICTs and connectivity and poor telecommunication infrastructure open access is often problematic. This makes the actual use of any open access journals, repositories, and implementation of software more difficult (Giarlo, 2005, Canada, 2009). It has been recently observed by Dicovitsky (2010). Although developing countries have made significant gains in access to mobile technology and infrastructure for information and communication technology (ICT) in the last few years, they are still struggling to achieve wide access to high speed broadband services. At the same time, price drops for such technologies are not benefitting the world’s poorest. This creates a digital divide between the developing and developed world.

- Funding to build and upgrade the internet infrastructure: Adequate funding to build, upgrade and maintain ICT infrastructure is a problem in many developing countries. For example, because of the poor ICT infrastructure in academic and research institutions in...
developing countries like Nigeria it is difficult to sustain the development of institutional repositories. Upgrading ICT facilities require enough financial support (Christian, 2006, Christian, 2008, Canada, 2009).

**Conclusion:**
From the ongoing debate it is apparent that academic libraries are ceaselessly striving to be involved in scholarly publishing to bring scholars together around the world through open access. There are many benefits of open access. However, in spite of many positive indications, developing countries are still lagging behind in achieving its full objectives. The noble objective of open access will not be realized if scholars in developing countries merely constitute "active consumers" and "passive contributors" under this initiative - reading only research works and publications by scholars and academics from developed countries published in the open access journals and archives (Christian, 2006). There are numerous problems in the realization of the full objective of open access in the developing world. These need to be addressed to make knowledge and information readily and widely available to people irrespective of where they live.

References

1. "OER@AVU - Open Educational Resources by the African Virtual University". Retrieved 27 September 2015.
Abstract:
In this paper I tried to find out the ways and means for better accessing of information. A survey on the secondary education institution affiliated to Tumkur university, Tumkur has been conducted for this purpose. Various types of users in this libraries i.e. Students teacher, teachers and non-teaching staff have been covered in this study. The libraries are now taking important steps for opening new visits in library services for the current library users. Moreover for the sake of the development of the common people, the libraries are taking massive programmes, which will be implemented in near future.

Introduction:

Education is the acquisition of the art of utilization of knowledge. “The aim of Education is to build character, increase strength of mind and expand intelligent Plato”1 has rightly said that Education has to produce perfect man sound in character, active in mind and strong in body and propose him for some ideal future.

The Libraries and education is partner since time of ancient civilization. This has been growing from time to time and has reached a stage inseparable in the age of modernization industrialization. The bonds between education and libraries have been further reinforced with the realization of the value of information as an important component. The role of libraries and information centers were regarded as important institutions for transformation of individual society to information society is predicted by the end of this century. Therefore education is without libraries unimaginable.

1 MAYER, Fredrick: foundations of Education. Columbus, Ohio; Charles E Merrill Books, 1963 p.7
Teacher Education Institutions-Secondary (B.Ed)

Teacher preparation course for the secondary level, generally known as B.Ed., is a professional course having three major components a) theoretical orientation, b) school experience and c) practical work. Sound exposure to all the three aspects is a pre-requisite for the preparation of a competent teacher.

Objectives of the study

Some of the important objectives of the present study include.

- To investigate the types of users and their involvement in various activities.
- To identify the functional aspects of librarian to meet educational needs.
- To identify the types of collection, methods of acquisition and adequacy of exiting library collection to meet the user needs.
- To identify the procedures in organization of documents and facilities to give access to the library collection.
- To find out the financial sources and adequacy of finance for Teacher Education institution libraries.

Scope and Limitations.

The present study is limited to above 13 B.Ed Institutions affiliated under Tumkur University. This sample represents both Govt, and Private managed institutions.

Methodology

For the purpose of the study questionnaire method was mainly used for collecting the required date. A specially designed questionnaire consisting of more than 30 questions was identified.

Analysis and Interpretation of the Data

Libraries are the service oriented institutions the objective of libraries is to promote the use of knowledge contained in various forms of documents in this regard the libraries has to develop variety of tools, techniques and services to provide right information to right user at a right time. The function and services to be able to meet the information needs of target audience. What are the scenarios of B.Ed libraries and information services? The following question investigates this.
Table No. 1, Library Services

It is evident from the above table no 24 that among various kinds of services Reference service is the only service in existence with majority of the institutions. The situations of the other kinds of services are satisfaction. The CAS/SDI services are providing any one institution. From the analysis of the above table no.28 and through personal discussions with the librarian of different kinds of institutions, it was found that except reference service, which is provided in majority of the institutions no other service is being rendered and the above listed types.

Based on the above, it can be concluded that the information service concept is no very popular among B.Ed college libraries. Hence, it is suggested to the libraries to know the different needs of the users and accordingly render library services of different types mention above.

Extensions activities are an important activity of the libraries. It is conducted to promote the use of libraries by the users. Through extensions activities the users come to know the different varieties of collection of the library, the types of services rendered and also the arrival of new documents and close interaction with the users of the library the following questions was aimed at knowing this.

Table No.2 Extension Activities in Libraries

From the above table no. 25 it evident that majority of the institution 5 colleges are not conducting extension activities in libraries. Only around 2 institution libraries are arranging extension activity such as book exhibitions. So based on the above analysis it can be concluded that extension activities listed in the above table are not proper among majority of Secondary education institutions except book exhibition. Hence, the investigator suggests considering the importance of B.Ed institutions activities in the library to promote the use of library resources apart from the role of library as a communication centre.

User study or survey is an important activity to identify the problems, requirements of readers and to know how the services facilities are being effectively utilized by the readers. Further, the results of such studies help to modify and to solve the problems of users and the
library. In addition to this it helps to a greater extent to take appropriate decisions on number of issues. Hence, used studies should be done periodically in the library to examine and evaluate the use of facilities and services etc. Is there any attempt by B.Ed libraries this direction? The below mentioned question identify.

<table>
<thead>
<tr>
<th>Responses</th>
<th>No. of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>5(45.4%)</td>
</tr>
<tr>
<td>No</td>
<td>6(54.5%)</td>
</tr>
</tbody>
</table>

**Table No. 3 Users Studies**

Through the user study is an important activity, it is evident from the above table No.26 that user studies are being conducted by 5(45.4%) libraries and 6(54.5%) institutions are not in practice of taking up of user studies. Hence, it was suggested to the library authorities to take active interest to conduct user study programmes periodically on different aspects of library. The reasons for not conducting in user study among B.Ed college libraries are identified in the following question.

**If ‘no’ specify the reasons**

An analysis of responses regarding the question reveals that the problems such as lack of communication and encouragement from the college authorities, the respondents expressed their helplessness to conduct user study programmes in the library. Hence, it was suggested to the library authorities and college management to periodically conduct user studies to identify the problems of the user in the using the library resources and based on this to take measures to improve the situation in library in the institutions.

The user studies attempts to identify the problems faced by users the exploiting the library resources and facilities. The results of users’ studies indicate necessary follow action to be undertaken to solve the problem. User education and orientation is of the activities/measure to overcome some problems of users. The role of B.Ed libraries in organizing such user education programmes.

<table>
<thead>
<tr>
<th>Program /activity</th>
<th>No. of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>User education/orientation</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>No</td>
</tr>
</tbody>
</table>

**Table No.4 User Education/Orientation Program**

From the above table no 27. It is evident that user education/orientation are conducted by only 6(54.5%) institutions are conducting user orientation programs and 5(45.4%) institutions are not conducting any programs. Hence, it is suggested to the library authorities to realize the importance of user education/ orientation programmed in library and collected for making earnest efforts by library and information services professionals to promote the use of library resources and facilities.

In this preset world of exponential growth of knowledge library being a social intuitions charged with the function of providing education, knowledge to the user etc librarians need for continuing education is a
must—due to the froth of profession. The developments in technology and complexities in library operations have to be known to the libraries to provide improved service to the clientele in this world of changing context. In this direction continuities education is must for librarians. It is helps to acquire new knowledge and kills for application in actual working environment. Hence, the following question was aimed at knowing this.

<table>
<thead>
<tr>
<th>Activity</th>
<th>No. of Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in Continuing Education Programs</td>
<td>Yes 4(36.3%)</td>
</tr>
</tbody>
</table>

**Table No.5 Continuing Education Programmes for Library Staff**

It is evident from the above table no 29 that majority of 7(63.6%) respondents are not understating any continuing education programmes and it is pity to say this only about 4(36.3%) respondents have participated in continuing education programmes organized by professional bodies and institutions.

The next question identifies the reasons for non-participating in continuing education programes by library information personnel of B.Ed libraries.

**Findings and Conclusion**

The findings of the study allowed the investigator to identify the suggestions to overcome some of the problems related to B.Ed libraries.

1. It was suggested to the library authorities to take keen interest to undertake several extension activities such exhibition talks /lecturer, demonstration etc. to promote the role of libraries.
2. The library authorities must realize the importance of the users study and user education /orientation to understand the problems and needs of users and also the use of resources, facilities and services. Hence, it is recommended to conduct user studies periodical and develop and organize user education/ orientation programmes the publication of the library guides books and also essential.
3. Suggested to the authorities to make provision for attending continuing education programs to update his/her knowledge and skills to improve the library activities and services.
4. Provisions such as a deputation, financial help is provided to encourage them to take part actively in continuing education programes.
5. Suggested to the government and authorities that there must be a librarian committee. The committee must
consist of principal, librarian representation from teachers and from the management.

6. Suggested to government to constitute the state advisory committee for B.Ed libraries comprising of government representation principal, librarians and teaching.

7. This committee must work as an advisory and supervisions agency for promoting the development of B.Ed libraries.

8. Suggested to develop standard for B.Ed libraries in the view of changing contexts.

Reference:
Students’ keenness on use of e-resources at Selected Medical College and Research Center in Bangalore: A Study

by

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ABSTRACT:
The study examines the use of electronic resources and services by the students in Medical College Library. The study aimed at identifying the adequacy of electronic resources, purpose and frequency of using digital resources. The suggestion has been given to strengthen the e resources and services. Internet evolution is injecting more competition into publishing and giving power back student’s in colleges. It presents new challenges for the students of the archive and could yet spell the end for many print documents.

Keywords: E- Resources, impact –ICT Roles students, internet,

Introduction:
Electronic publishing made its beginning in 1985 in Germany when the first electronic book was published. Since then, there has been a study growth in the number of publishers entering into the electronic publishing field. In the emerging Information Technology ruled knowledge economy of the 21st century e journals and E books are emerging as an imperative. One of the primary goals of library strategic plan is to change the way we serve the information needs of our users. This includes the changing techniques of library service delivery, delivering more services off-sites and expanding technology use, availability and complexity and complexity. The goal of librarians is to provide an effective combination of print, non-print, and electronic resources (Hers), and the integration of the use of these resources in support of research at the host institution.

The libraries therefore need to formulate a separate e-resource collection development policies to address these issues. The purpose of this policy is to provide guidelines in choosing to appropriate resources and establish consistency and priorities in managing this important part of the libraries’ collection. The electronic services are changing library usage patterns; scientific libraries are spending an increasing percentage of their collections budget on electronic services.

The impact of altered usage patterns and increasing expenditures by college libraries on electronic services have heightened interest among scientific libraries to measure electronic services usage. The present study is confined to three college libraries (owned by state government) of Karnataka namely (a) Bangalore Medical College and Research Institute (BMCRI)
(b) Kempegowda Institute of Medical Sciences (KIMS) (c) M S Ramaiah Medical College (RMC).

**Objectives:**
1. To study the frequency and purpose of using e-resources.
2. To suggest/recommend the ways and means to improve the e-resources of medical college libraries.
3. To know the different types of e-resources and services available in the medical college Libraries.
4. To access the reason for using various e-resources.
5. Use and impact of e-resources on the quality of research in selected medical college libraries.

**Statement of Problem:**
Medical college libraries have to develop a well-balanced document collection to meet the needs of present and future requirements of the users. It is possible only when the acquisition is planned. It is important for libraries to develop a collection of high standards to attract students and provide support for them to use e-resources effectively.

**Scope of the study:**
The scope of the proposed study is to examine the preferences of the students towards printed books and journals, electronic information resources, and pattern of using e-resources. This can be extended over to the other libraries. Detailed analysis can be taken to see the impact of technology on libraries and usage. The present study is confined to three Medical college libraries.

**Methodology:**
To meet the objectives of the study, a close-ended structured questionnaire method is used to collect the data. The collected data from questionnaires is analyzed with descriptive statistical methods. Data were collected from the three college libraries through structured questionnaires. The structured questionnaire was designed keeping in view the stated objectives consisting of various types of questions with the following aspects: types of e-resources, total collection/acquisition of e-resources, reasons for acquiring/subscribing e-resources, selection/recommendation of e-resources, method and mode of procurement of e-resources, promotion of e-resources, problems in e-resource development, and future plans to improve the e-resources development. A total number of 50 self-administrated questionnaires were administered to the students of the three Medical college libraries. Apart from these bar diagrams, pie charts, and tables are also used for representation of data.
Survey Result:
The status of respondents includes 19 students (26.03%) from BMCRI, 31 students (42.47%) from KIMS, and 23 students (31.50%) from RMC

Sample Population.

<table>
<thead>
<tr>
<th>SL NO</th>
<th>COLLEGE NAME</th>
<th>NO OF Students</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>BMCRI</td>
<td>19</td>
<td>26.3</td>
</tr>
<tr>
<td>02</td>
<td>KIMS</td>
<td>31</td>
<td>42.47</td>
</tr>
<tr>
<td>03</td>
<td>RMC</td>
<td>23</td>
<td>31.50</td>
</tr>
</tbody>
</table>

Table 1.
Perceived Level of Computer Literacy of Students.
According to their own assessment, a majority (69.86%) of the respondents stated that they are having “average skill” in the use of computers, and 30.14% of the respondents (opined that they have “above average skill” in the use of computers. On the whole, respondents’ self-perceived ability to use the computer for electronic information sources is quite high.

<table>
<thead>
<tr>
<th>Libraries</th>
<th>Average</th>
<th>Above average</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMCRI</td>
<td>13(68.42%)</td>
<td>6(31.58%)</td>
<td>19(100%)</td>
</tr>
<tr>
<td>KIMS</td>
<td>21(67.74%)</td>
<td>10(32.26%)</td>
<td>31(100%)</td>
</tr>
<tr>
<td>RMC</td>
<td>17(73.91%)</td>
<td>6(26.09%)</td>
<td>23(100%)</td>
</tr>
</tbody>
</table>

Table 2.
Use of Library Services.
The respondents were asked to indicate the services utilized at the library and information center. The services provided by library and information center are depicted in Table 3. The statistical analysis shows that all the students belonging to the Medical college libraries utilize e-journals, online databases, Internet facility, CD-ROM databases, and the scan/Xerox/printout facilities provided by the library.

<table>
<thead>
<tr>
<th>Libraries</th>
<th>Usage of Internet</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMCRI</td>
<td>19(100%)</td>
</tr>
<tr>
<td>KIMS</td>
<td>31(100%)</td>
</tr>
<tr>
<td>RMC</td>
<td>23(100%)</td>
</tr>
</tbody>
</table>

Table 3.
Use of types of electronic information resources
To ascertain various demands, the respondents were asked to state their interest in the use of specific types of electronic information resources. Their responses are depicted in Table 4. The analysis shows that all the students belonging to the libraries preferred the use of subject-topical website, e-journals, online databases, e-monographs, CD-ROM databases, and standards.
Purpose of using e resources

The respondents were asked to give reasons as to why they use electronic information resources, but based on choices fixed by the students of Medical college libraries. Responses for the various professional purposes for which electronic information resources were used were elicited from the respondents. Table 5 indicates the purpose of using the electronic information resources. The analysis shows that all the students belonging to the college libraries used electronic information resources to consult subject indexes and compendia, monographs, online databases, teaching-related e-journals, and the Internet sources—especially those presented by teaching aids, to contact professor representatives/experts to consult literature and standards.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>BMCRI</th>
<th>KIMS</th>
<th>RMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject information</td>
<td>21(67.74%)</td>
<td>10(32.26%)</td>
<td>23(100%)</td>
</tr>
<tr>
<td>Teaching related</td>
<td>21(67.74%)</td>
<td>21(67.74%)</td>
<td>23(100%)</td>
</tr>
<tr>
<td>E journals</td>
<td>17(73.91%)</td>
<td>31(100%)</td>
<td>23(100%)</td>
</tr>
<tr>
<td>To contact professors</td>
<td>13(68.42%)</td>
<td>10(32.26%)</td>
<td>6(26.09%)</td>
</tr>
<tr>
<td>To conference</td>
<td>21(67.74%)</td>
<td>21(67.74%)</td>
<td>17(73.91%)</td>
</tr>
<tr>
<td>Internet sources</td>
<td>19(100%)</td>
<td>31(100%)</td>
<td>23(100%)</td>
</tr>
</tbody>
</table>

Table 5.

Windows Applications in Pharmacopoeial Libraries.

The respondents were asked to indicate the Windows application that they used. A significant portion of the students belonging to the college libraries used Windows 7 (68.42%, 64.52%, and 65.22%) which was followed by Windows XP (21.05%, 19.35%, and 17.39%); see Table 6.

<table>
<thead>
<tr>
<th>Purpose</th>
<th>BMCRI</th>
<th>KIMS</th>
<th>RMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 2000</td>
<td>1(5.26%)</td>
<td>2(6.45%)</td>
<td>1(4.35%)</td>
</tr>
<tr>
<td>Windows XP</td>
<td>4(21.05%)</td>
<td>6(19.35%)</td>
<td>4(17.39%)</td>
</tr>
<tr>
<td>Windows 7</td>
<td>13(68.42%)</td>
<td>20(64.52%)</td>
<td>15(65.22%)</td>
</tr>
<tr>
<td>Windows vista</td>
<td>1(5.26%)</td>
<td>3(9.68%)</td>
<td>3(13.04%)</td>
</tr>
</tbody>
</table>
Use of Internet Browsers in Libraries.
The respondents were asked to indicate the Internet browsers they used to access electronic information resources. A significant portion of the students belonging to the college libraries used Internet Explorer (89.47%, 87.09%, and 82.61%);

<table>
<thead>
<tr>
<th>Internet browsers</th>
<th>BMCRI</th>
<th>KIMS</th>
<th>RMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internet explorer</td>
<td>17(89.47)</td>
<td>27(87.09)</td>
<td>19(82.61%)</td>
</tr>
<tr>
<td>Google chrome</td>
<td>1(5.26%)</td>
<td>1(3.23%)</td>
<td>2(8.69%)</td>
</tr>
<tr>
<td>Mozilla Firefox</td>
<td>1(5.26%)</td>
<td>3(9.68%)</td>
<td>2(8.69%)</td>
</tr>
</tbody>
</table>

**Table 7.**

Using Patterns of Electronic Information Resources.
The respondents were asked to indicate the usage patterns of electronic information resources. A significant portion of the respondents (78.08%) downloaded the contents in removable storage media, mostly into pen drive. A portion of the respondents (42.47%) downloaded to their computer hard disk, and some (58.90%) took a print out **Table 8.**

<table>
<thead>
<tr>
<th>Use Patterns</th>
<th>Response</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Download and save the contents in computer hard disk</td>
<td>31</td>
<td>42.47%</td>
</tr>
<tr>
<td>Download in removable storage media(Pen drive)</td>
<td>57</td>
<td>78.08%</td>
</tr>
<tr>
<td>Tale printout of the contents</td>
<td>43</td>
<td>58.90%</td>
</tr>
</tbody>
</table>

Retrieval Performance of e-Resources.
Table 9 reveals the retrieval performance of e-resources at the three Medical college libraries. All the students belonging to the college libraries stated that the retrieval performance of electronic information resources was excellent. (See **Table 9**).

<table>
<thead>
<tr>
<th>Retrieval performance</th>
<th>BMCRI</th>
<th>KIMS</th>
<th>RMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excellent</td>
<td>19(100%)</td>
<td>31(100%)</td>
<td>23(100%)</td>
</tr>
<tr>
<td>Good</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Fair</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Not good</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Benefit of Electronic Information Resources.
Another question sought to ascertain the benefit e-resources for the students. The analysis shows that all the students stated that the electronic information resources helps in evidence-based research, keeping up to date in specified areas and its timely access.
Table 10.

User's Perception of e-Resources as a Replacement for Print in Meeting Their Information Needs.
Another question that sought to ascertain the impact of all e-resources of the students was the extent to which they were replacing printed media in satisfying their information needs. The analysis shows that all the students stated that a very high extent, electronic information resources have become a substitute for printed materials. While a significant portion of the students belonging to the concerned college libraries (57.89%, 54.84%, and 52.17%) stated that printed materials are still the basic element in satisfying information needs, to a small extent, electronic information resources have become substitutes for printed materials.

<table>
<thead>
<tr>
<th>User's perception</th>
<th>BMCRI</th>
<th>KIMS</th>
<th>RMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic information resources have become a substitute for printed sources to a very high extent</td>
<td>19(100%)</td>
<td>31(100%)</td>
<td>23(100%)</td>
</tr>
<tr>
<td>Electronic information resource has become a substitute for printed sources to a medium extent</td>
<td>02(22.22%)</td>
<td>01(05.88%)</td>
<td>02(18.18%)</td>
</tr>
<tr>
<td>Printed materials are still the basic element in satisfying information needs, so to a small extent electronic information resources have become substitutes printed materials</td>
<td>11(57.89%)</td>
<td>17(54.84%)</td>
<td>12(52.17%)</td>
</tr>
</tbody>
</table>

Table 11

Usage of e-resources in research.
Effective use of electronic information resources for retrieving needed information will have a profound impact, especially on the quality of research output of the students. The analysis shows that all the students belonging to the college libraries use e-resources.
### Table 12
**Impact of e-Resources on Quality of Research**

Electronic information resources provide latest, comprehensive, and up-to-date information that is essential for research. The respondents were asked to indicate to what extent they feel the impact of e-resources on the quality of research. All the students belonging to the college libraries stated that the electronic information resources highly improved the quality of research pertaining to the specific subject field.

<table>
<thead>
<tr>
<th>Impact of Research</th>
<th>BMCRI</th>
<th>KIMS</th>
<th>RMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly improved</td>
<td>19(100%)</td>
<td>31(100%)</td>
<td>23(100%)</td>
</tr>
<tr>
<td>Improved</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Not improved</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Table 13.
**Satisfaction Level of Access to Electronic Information Resources.**

Respondents in this study were asked about the satisfaction with the current status of electronic information resource access in their library and information center, which is a very important variable to investigate user behavior. All the students belonging to the college libraries were highly satisfied with the usage of electronic information resources.

<table>
<thead>
<tr>
<th>Satisfaction level</th>
<th>BMCRI</th>
<th>KIMS</th>
<th>RMC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highly satisfied</td>
<td>19(100%)</td>
<td>31(100%)</td>
<td>23(100%)</td>
</tr>
<tr>
<td>Satisfied</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Moderately satisfied</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>No comments</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Finding and Conclusion:

E-resources are an accepted means of information resources in the present information society; with the amount of new resources available, the need for adequate computer literacy and the aptness of using the existing sources has become the need of the hour and the study reveals its impact in terms of awareness and effective use of the available resources by the Students of selected government first grade college library in Tumkur dist.
Cost, the level of importance, and the use of e-resources have dramatically increased in the digital library environment; Web DB, e-book, e-journal, and other e-resources such as CD-ROM, DVD, and micro materials have become important sources in libraries.

College librarians should use new information technologies and new approaches to better serve their Students in new ways of acquiring information. Libraries should organize their services so that they bring their information resources closer to the busy Students. They should acquire new skills and learn how to organize information for presentation on the Internet portals or by handheld devices. Additional drive for college librarians in their efforts is the introduction of evidence-based practice. Librarians can teach Students to search and critically evaluate information, thus helping in the process of their research. Librarians with experience in licensing and managing ERs are effective in rapidly diagnosing and remedying access problems.

References
E-Library and Information Services in India in the 
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Abstract:
Library information services are providing effective and efficient in India in the emerging digital environment, digital libraries have made considerable advantages both in technology and its applications. Their vital role is increasingly becoming a measure of the library’s contribution to the transformation and development of a society and the nation at large. Consequently, libraries are becoming less important for the material they collect or house. Instead, their importance is being measured in respect to the fulfillment of the users’ requests. This paper will discuss the available technological opportunities that can be used by the library information services in addressing such challenges.

Keywords: Digital library, library services, ICT, digital age, key challenging areas for libraries

Introduction
The literature on library and information services indicates that Libraries started off as store houses, where books were more preserved than utilized and librarians acted like some form of custodians and their interaction with users were minimal, for example, only in locating books and serving users, then there was a shift as a result of information communication technology. Traditional methods of collecting, storing, storing, processing, and accessing information have undergone a massive transformation due to the growth of virtual libraries, digital libraries, online databases and library and information networks. The users were expected to use the library on their own. At most, if a user asked for a book, then the service that would be offered by the so called librarian was to pass on the book and leave the user alone. From the ancient times to present us note that this trend in services has tremendously changed to due information technology.
Now days, libraries and librarians play an important role in providing access to information, organizing it, and helping users to find the
information they need. Consequently, information services have become a key element for libraries. The present user’s interest is to get the information in need within a given time frame.

**Digital Library of India**
The Indian Institute of Science (IISc), Carnegie Mellon University (CMU), the International Institute of Information Technology, Hyderabad and many academic, religious and government organizations in India, a total of more than twenty “content creation centers”, have become partners in the Digital Library of India. The Digital Library of India seeks to preserve Indian heritage that is contained in books, manuscripts, art, and music. Each centre its own unique collection. The digital library is a leader in worldwide efforts to make knowledge free. A pilot project to scan some 10000 books was initiated at Carnegie Melion University and then followed up at all the knowledge of the human race in digital form and make that content searchable, independent of language and location and to ensure that the cultural heritage of countries like India is not lost during the transition from paper to bits and bytes as they were lost during a former transition of cultural content from palm leaves to paper.

**The changing role of Libraries**
Libraries are organized collection of monographs, periodicals and other sources of recorded information. They commonly include catalogues, directories that provide information and indexes which help users to find information in other sources for the last few years, libraries started providing access to information in electronic formats such as CD-ROMs, World Wide Web and online databases. The traditional role of libraries has always been as an intermediary between the information producer (and publisher) and the user. For the information producers, libraries acted as a clearing house of products. Information producers would normally provide the library with their products, thus reducing administrative problems and costs of providing the products directly to users. For the user, libraries are efficient instruments to make available making of limited set of relevant information source out of the entire universe of publications. Libraries act as selective filter and quality instruments, making available to users only those publications that are relevant and sufficient to end-users. Since publications are acquired though library funds, information is usually made available to end users either free of charge or at a minimum cost.

**Information services**
Library user services can be divided into two categories: library public user services and library technical user services. Library public user services refer to circulation, bibliographic instructions, distance learning, government documentation, reference and special collection. Library information user services focuses on procedures and operations of maintaining, developing and supporting library
collection and services behind the scene such as acquisition, cataloguing, classification, inter library loan, document delivery and serial systems.

In the digital age, the most common library user information services starts from the personal oral or written communications between librarians and library users: Traditional library user information services have the following major features: Face to face, this face-to-face personal communication includes eye contact, facial expression, oral communication, and written communication. Onsite, this includes, campus outreach coordination and collaboration, library tour, ready reference, user technical support and virtual reference

Electronic library user services include the Internet and the worldwide web, computerized library catalogs, digital libraries, distance learning services, e-databases, government, instant message services, interlibrary loan and virtual references.

The traditional roles of libraries can be summarized as below.

Selection: Choosing and acquiring information resources available in the market place, based on user needs and quality standards.

Storage: Maintaining the availability of publications though short-term as well as long-term storage and presentation.

Services: Making information resources available through facilities and procedures for onsite use, circulation, and loan from other libraries.

Support: Providing guidance and assistance to users, including the development of support systems such as catalogues user education and information services.

Information resources come in various format—printed, audio, video multimedia and electronic. These resources may or may not be owned by the library. Some of these resources may be free and available to users directly, others are available only through libraries that have acquired them.

Libraries are expected to “add value” to the products and services. Adding value to information is part of the core and expertise of libraries. Value is added to information by facilitating access through indexing and bibliographic description, and through the creation of systems, which make information more logically organized and easier to find.

Libraries themselves add value to the collection (both traditional and networked) by helping users navigate the universe of information through content development, instructions, search services, and reference assistance.

Technology trends change in library services

Since the 1980 each new step in library automation has changed library services. In hindsight we can see a number of trends, among them: access from multiple locations, making more resources available; making information available in raw forms and diminishment in the role of intermediaries. All these trends have been enabled by technological developments in the area of networking, file storage, and more graphic user interface) they have also been enabled
by agreements on standards and protocol that permit the linking
together of resources from disparate sources.

**The digital age**

We are in the digital age; the primary role of information in this age is
in many digital cases. The primary means of sharing information is
the digital network. With the digital technology, information in various
formats- text, audio, video and electronic can be created, stored,
organized, accessed and transmitted with relative ease, and in forms
that we could not have thought of earlier. The digital age has brought
many aspects of library services. The card catalog has been replaced
with OPAC in many libraries, users now search for information from
their desktop; users download e-books on to their PDAs, full text
retrieval of information sources is becoming common place and
services are increasingly becoming personalized and pay as use.

**Access from multiple resources**

The key result of automation efforts was to make access more
convenient to library users. In the days of card catalogues; library
systems often forced users to travel to a central catalogue or multiple
branches just to discover holdings. Today users can consult all
holdings from workstations throughout the system. This notion of
access from multiple locations has also affected the use of indexing
and abstracting services. In 1970 unless a user willing to incur a
significant pay-per-user fee from a private online service s/he had to
travel to the site in his/her library system that had the published
volume containing the sought after index.

In the 1980s the users had to go to location that had the CD-ROM of a
particular index mounted. Library services indexing and abstracting
are mounted online as databases or on CD-ROM servers, and are
usually accessible throughout the system. Divorcing library services
from physical location provides a profound difference in what a library
is today. Making more resources available; for many years library
automation systems were thought of as merely ways of delivering only
bibliographic records.

**Making information available in raw forms**

The types of information available to users in digital form have
continued to grow. If we consider a bibliographic record to be a
“representation” of an original book or article, then over the past
decade we have been providing users with progressively truer
representations. Indexing and abstracting, services have moved from
providing searchable index terms or descriptors, to searchable
abstracts to full text articles and books. In online library catalogues,
have moved from bibliographic records, to full text and page images.
This movement towards rawer information or more detailed
representations is often called “enhanced record” and has been a key
element for those studying information retrieval.
Diminishing roles for intermediaries
The success of library automation has meant that users increasingly interact with online systems, and have less reliance upon library staff. The library systems allow users to check circulation information without even contacting the circulation unit and always users are making user requests without interacting with a library staff member.

Implications of technological advances on the library environment
We are already seeing a transformation in the world of libraries, libraries are becoming less important for the materials they collect or house, and more important for the kind of materials they can obtain in response to user requests. This shift is direct result of the recent development of digital networking in an environment where standards for description were already well established. Libraries need to be careful about becoming too dependent upon the World Wide Web resources. Web resources often change location, and until location independent naming schemes replaces URLS, updating a library’s link to external resources is likely to be a serious problem. Few information providers have the kind of commitment to long term information maintenance that libraries have; libraries need to be concerned that the creators of the key resources they link to day may soon tire of up out dated resources. Libraries need to avoid relying too heavily upon external information resources, which are free to day but may become expensive some time in future; some information providers have learned the same business principles as drug dealers giving out free services until the user is hooked to the business.

The key challenging areas for libraries in an online age
A number of societal trends have the potential to severely affect libraries everywhere are embracing a whole new world. That’s because students now study and learn differently than their predecessors did even a decade ago. Today’s Libraries are online domain of Google, Facebook, and Twitter etc. These resource people answer questions and offer guidance on everything from good writing and study plans to computer-related matters and accessibility issues. Key elements among these trends is the movement from flat fee pay to pay – per – use model, best – seller phenomenon, the consolidation of electronic information distributors, erosion of provably, and issues of access and cultural diversity.

Flat fee Vs pay per use
The movement towards pay per use model is likely to severely affect user habits, particularly as this begins to penetrate web based delivery systems. Pay per use models tends to discourage exploration and encourage readers to examine items that others have already deemed popular. Libraries 1980 experience with pay per use online
indexing and abstracting services led by many librarians to embrace newer flat fee model that arose such as CD – ROMS.

**Best seller phenomenon**

Economies of scale make mass distributed information cheap and available, and can lead to an environment where smaller audience information is more expensive and harder to find over time this may well lead to the favoring of electronic delivery of entertainment over delivery of information.

**Consolidation of electronic information distributors**

As corporate mergers, buy outs, and consolidations leave is with fewer and fewer independent information providers, this will change the information people get. Will large conglomerates with interests in many different types of industries begin to treat their information distribution divisions the same way they treat all their others commodity distribution division.

**Privacy**

As people begin to pay for the information they receive electronically, what kind of privacy issues does this raise. Will reading and buying habits be traced and sold as demographic data Can libraries continue to take their strong traditional privacy stand when providing pay per view information.

**Access**

Who will guarantee access in an era when someone must pay for each byte of information that is accessed? Can libraries contrive to provide free access to all their constituents in a pay per view era. Will the best seller phenomenon take hold and make available only least common denominator information will the information needs of the less affluent be met in the way that they can afford.

**Cultural and electronic diversity**

Will the world of online digital information lead more or less diversity in that information. Will the best seller phenomenon take hold and make available only of the less affluent be met in the ways they can afford.

**Conclusion:**
The provision of effective and efficient library and information services in India in the digital age depends on the number of factors. Librarians need to recognize the changes that have already taken place in libraries, and to be aware of the ways in which broader
societal change is affecting Libraries. It can also be seen that many of the initiatives are one time project with a limited grant, often without any proper planning for continuity. They need to realize the advantages of the mass delivery of library information services in the digital age. Since the new technologies forever redefining the model of delivering instruction and services to keep pace with the technological advancement in information and communication technology to meet the expectations of the users.

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