INFORMATION AND COMMUNICATION TECHNOLOGY IN PU COLLEGES: A COMPARATIVE STUDY OF GOVERNMENT AND PRIVATE INSTITUTIONS IN BALLARI DISTRICT, KARNATAKA

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Abstract

The study propagates how ICT-based libraries can bring changes in the contemporary education system and the evolution and adoption of ICT in PU colleges. It is a comparative study of government and private PU colleges of Ballari district. It implicitly studies the uses of ICT in multilayered tasks. It also includes fetching the drawbacks in adopting ICT and also strategies used by the libraries which are with good improvements. It is encompassed with objective data analysis finding and suggestion and conclusion.

Keywords: Communication process, Information technology, PU collages, Knowledge storage process 'technological push'

Introduction

Information is a vital resource. It is originated from Human cognitive skills and useful for

mankind in all the criteria of human activities like education, transportation, business, industry healthcare, demography, public safety, national security both at the institutional and individual levels. IT has revolutionized information processing. It has been the chief instrument of knowledge dissemination.

The library is a growing organism. (4^{th} Law of Library Scienceby Dr.Ranganathan).LIS started growing technologically from the early '60s and in the '90s. Library modernization took place to an advanced level. In this new century, the destination has reached a high peak. The contact between the right reader and the right book at the right personal way is following in much more conceit with the powerful spontaneous task.

It deserves to have all information from "technological push". This bulk communication can be efficiently handled with the help of IT for the betterment of society.

PU Education: Pre University course or pre degree course (PUC or PDC) is an intermediate course which is known as 10+2, of two years duration conducted by state education institutions or boards in India. This pre university course is also known as the plus-two or intermediate course.

PU course is 2 years integrated course. It is called 12^{th} class and also called +2 course. It is provided by state board and also by central board. In Karnataka it is offended by Department of PU education, Karnataka.

Statement of the problem

The impact of ICT in PU college libraries is a considerable issue because where the production of different Professionalismis trained at the basic level. We can notice here each group of users has a distinct purpose for information support. This bulk of users can be satisfied with the effective use of IT. The particular study is on "Impactof ICT in PU Colleges –A Comparative Study of Government and Private PU Colleges in the BallariDistrict".No studies have been done on this topic and it would be beneficial to improve the libraries by adopting ICT skills. There are limitations to the study because it covers only the colleges which come under Ballari district PU colleges comparison is done between the government and private PU colleges in adopting ICT skills in the libraries. This article concentrates on how dolibraries of PU colleges set their level by adopting ICT tracking their development lines in comparison with Government and Private colleges.

Hypothesis:

The topic is approached with the following hypotheses:

1. The impact of ICT may not be noticed in all the colleges.
2. There may be awareness among users about the benefits of ICT for seeking information.
3. There may be high demands for initiating ICT-based libraries.
4. There may be a shortage of budget for implementing ICT in libraries

5. Orientation is the best method for advancement in ICT

The objectivesof the study:

This article is intended to study the impactof ICT in PU libraries. The verities of technological applications are used in the process of communication for the transmission of information. In the variant forms of information science such as:

1. The utilization of technology and the consequence of the usage.
2. To monitor the appropriate level of improvements in using IT.
3. To bring awareness about updating libraries with ICT.
4. Influencing facts for development of ICT in libraries.
5. Pros and corns in using ICT.

Review of literature:

Muhammad Arshad (2016) "A Study of ICT Competencies among University Library Professionals of Punjab, Pakistan. The objectives of the study wereto assess the status of the ICT competencies of LIS Professionals.It provides quantitative and qualitative data.The highlights are proficiency in handling social media, computer programming skills, storage, and dissemination by technological methods. They adopted to acquire competencies.The outcome of this review is the library profession is not in the iconic status that consequently affected the ICT in a library. It is the only small group of users who get high quality of information service.

Kevalkumar.M Patil (2017) "Uses of ICT resources and services at selected Grant in university libraries in Gujarat. The writer begins the article by describing the increasing demand for using ICT over the decades and the invention of new technologies. Its implication in the library for 'saving time for reader and staff' the writer's objective is to find out the status of ICT implementation in grants in aid universities. Components of ICT are described in brief and benefits of ICT uses are listed down.

Dhanavadhanaet.al (2012). The study is on assess and awareness of ICT resources and services in medical college libraries in Pondicherry. ICT is a revolution that reflection can be seen in the library also. The study has objectives like assess and awareness of ICT of the

faculty members in the medical colleges. Electronic resources are very useful for them almost all the information is received from communication technology. Users of ICT in the medical college are considerably knowledgeable so the level of using ICT is equally increased up to the present requirement.

Lakshmipathi,L. (2017). The study is on the "Use of ICT resources and service by faculty members by Sri Vidyanikethan engineering college Chittor (D) AP. In the process of the teaching-learning process, ICT played an integrated role.There is a huge number of ICT products are available now. ICT strikeout geographical the study shows 42.38% are satisfied with available resources 34.59% users facing problems with low-speed internet the article has been concluded like this. The library has been balanced with good maintenance of ICT components and users reached that competency.

Mahamad Hanifa (2007)."Use of ICT-based resources and services in the special library in Kerala" The study highlights the contemporary requirement of ICT-based libraries and the ability of users to utilize them. It provides information on the distribution of library users and designation. ICT-based resources and services. There are 56% of central government users are found and 41.41% of state government users are found to take the benefits of library resources and services. They are happy with ICT applications. They are also facing problems with less literacy in using ICT.

Lakshmikanth Mishraet.al (2014).The study is on the Utilization of ICT resources and Services in the University library. The study revolved around Barcoding technology, Bulletin board services, CAS Chat services, computer technology bulletin board, NPTELservices, online full-text services, webtechnology. The article concluded with universities are in a better position in adopting and improving so many competencies of ICTwith full efforts and facing the upcoming challenges to improve and transcend ICT based libraries.

Methodology

This is a survey-based study of PU college libraries in Ballari District. The study comprises 117 PU colleges in the district among this 32 are Government and 85 Private colleges. The comparison is done between these two sets of colleges to understand Statuesque between private and Government colleges in respect of ICT implementation, Components of ICT used, competency reached by students and faculties, budget allocation, the strength of

students, quality of educational resources available in the library and the library infrastructure. There are 1600 student respondents among them male 700 students and female 900 students. These student respondents are studying in different combinations. Such as arts 450, commerce 650 and science500.There are 496 teaching faculties participated in the survey and also 40 respondents are library staff.In the Ballari district PU colleges, students, faculty, library staff were approached with the set of questionnaires. Each questionnaire consisted of a segment related to ICT as well as physical observation of libraries at the time of survey is evidential in writing this article.

An overview of Ballari District Government PU colleges:

They are 32 in number started from the early decades of 1940 the study covers till 2017 the asset is concerned its building, annual budget allocation, sanction from the government of Karnataka. Manual resources like books periodicals, journals, and electronic resources like a computer, hardware, software, like floppy disks, CD, DVD. and Internet resources are available. In government colleges, policies are very liberal. Students who are all applied got admission. They are not burdened with the Fees structure. Most of the students are not of an economically sound background. They relied heavily on library resources.

It shows that private colleges exist as early in the pre-independence period and the number increased to 106in that some are granted with government aid and some other are unaided. The building infrastructure is good. Budget allocation for the library is biennial. They are loaded with physical assets like chairs, tables, separate reading cubes, reading rooms, electrical and electronic gadgets, cleaning supplies, hygiene washrooms. Study material is concerned libraries in private colleges are well equipped with materials like print and non-print materials like books, periodicals, journals and electronic gadget like hardware and software components like CD ROM, floppy disk, computers, digital journals are available. The libraries have a 3G network connection and multiple area networks like LAN WAN with software like OPAC, E-lib is available. Students are selected on a meritorious based and also on heavy fees structure. Scholarly students are allowed for certain fee discounts.25% of students are given admission on heavy payment seats. Library staff, teaching faculties are good in number. Students' strength is moderate. A maximum number ofstudents are from sound economic backgrounds. Even though there are different combinations like *arts*,

science, commerce streams, most of the student's strength is in *commerce*followed by in *science.*

Area of the study

This article is intended to study the impactof ICT in PU libraries. The verities of technological applications are used in the process of communication for the transmission of information. In the variant forms of information science such as

- Computer technology
- Communication technology
- Multimedia technology
- Network and barcode reading technology

The overall activities of the library like

- Library automation
- Library management
- Reprography
- Technical communication
- Library networking

These all are can be handled efficiently with IT

Traditionally above-mentioned library activities are fulfilled by manpower. After the invention of technological advancement libraries set forward a step further to ICT for its all activities. We can notice the impact of ICT in the library very clearly in these areas.

These areas are studied in comparison with government and private PU colleges

1. **Library automation**: This system is replaced by ICT by automated technology. The books which are kept in the proper place can be viewed by the scanners and bar code readers. It shows where the books are located or elsewhere it should be kept back.

In PU colleges, particularly which belong to the Ballari district, the influence of ICT can be noticed in library automation only in private colleges but where the government colleges are laggingin this. They are still practicing the good old manual method.

2. **Library management:** PU libraries used this opportunity effectively. This system is effectively replaced from the old method that is a manual method of classification and Indexing using trained manpower.The new method with just a set of computer systems and network wires relieved so muchlabor of the library staff with 100% accuracy. This made a greater impact on the library. Almost all the resources are classified, indexed, catalogued. Databases are created so that it has been becoming very easy to users with the help of it library management is running very smoothly without any hurdles.

This situation can be noticed in private colleges. The majority 89% of the private colleges stepped up the library management with the help of ICT but unfortunately same is not in the case of Government colleges still they preferred the manual method classification, cataloguing, indexing with lots of ledger and cards.

3**. Library Networking**: ICT encompassed the information of the whole globe and made it reach every person with the required time in the required way. PU libraries used it very authentically with more enthusiasm

In private colleges of this area students and faculties are utilizing it in the full form with that they scaled it in the satisfaction level with the topmost nominal. They perceived the reason that library management with these ICT comforts they are highly benefited and satisfied because it saved them time and energy and directed them towards their deserved information very spontaneously.

In the government colleges, library networks to share and disseminate information to their purpose ICT has been used but not equal to that of private colleges but at least to the same extent to suffice user needs.

4). **Reprographic Service**: Reprographic service is the vastly utilized service in the library. In these decades this is quite a commonly used service. Three types of reprographic services are used to promote information, manipulation. They are with photography, photocopy, microfilms, microfiche.

Private PU colleges assess this information to an enduring level even Government colleges are competing very well in this matter.

5) **Technical communication**: It involves electronic mails, facsimile transmission, electronic journals, teleconference and data communication networks, and also technical writing, editing publishing DTP. This kind of technological communication was not there before and in the present scenario of LIS, these systems are tremendously increased in private PU colleges. Library staff,faculties,students even administrators are fully benefited out of this where all the new arrivals, issue/returns books are notified with E-mails and messages to their registered contact numbers.

Private colleges are making use of teleconferencing in a very profound form and E-journals, facsimile transmission is available utilized properly in government colleges.These kinds of facilities are not availed in government college because to work out this kind of technology manpower is required and the technical media like a computer,network,technical operators are required. That is not available in these colleges.

Data Analysis and Interpretation

Questionnaires were circulated among students, faculties and librarians. These responses were processed for further analysis. These data are interpreted like this Library activities are tabulated here and the comparison is done between the Government and private PU colleges.In the form of percentages, their performances are graded on the Lickert scale.A number of responses and number of colleges involved in data analysis from 32 government colleges and 85 aided and unaided PU colleges the participants were 1600 students and 496 faculties and 40 library staff.

Table-1. Availability of ICT Resources and Services

Sl. No.	ICT resources and services	Govt. PU colleges		Private PU colleges	
		N=32		N=85	
		Yes	No	Yes	No
1	OPAC	4 (12.5%)	28 (87.5%)	34 (40%)	51 (60%)
2	Digital library service	2 (6.25%)	30 (93.75%)	21 (24.70%)	64 (75.29%)

3	Computers	27 (84.37%)	5 (15.62%)	77 (90.58%)	8 (9.41%)
4	CD/DVD	14 (43.75%)	18 (56.25%)	81 (95.29%)	4 (4.70%)
5	Projectors	21 (65.22%)	11 (34.37%)	68 (80%)	17 (20%)
6	Electronic document	27 (84.37%)	5 (15.62%)	83 (97.64%)	2 (2.35%)
7	Current awareness service	6 (18.75%)	26 (81.25%)	33 (38.82%)	52 (61.17%)
8	Audiovisual service	20 (62.5%)	12 (37.5%)	59 (69.41%)	26 (30.58%)
9	E-Books	4 (12.5%)	28 (87.5%)	16 (18.82%)	69 (81.17%)
10	E-journals	7 (21.87%)	25 (78.12%)	12 (14.11%)	73 (85.88%)
11	Internet service	12 (37.5%)	20 (62.5%)	68 (80%)	17 (20%)
12	Document searching service	5 (15.62%)	27 (84.37%)	14 (16.47%)	71 (83.52%)
13	Bulletin board service	---	32 (100%)	4 (4.70%)	81 (95.29%)
14	Library portal service	----	32 (100%)	nil	85 (100%)

N=32 (the number of Government colleges)N=85 (The number of aided and unaided PU colleges)

Table-2. Usage of ICT Resources and Services

Sl. No.	**ICT Usage by Users**	**Govt. PU colleges**		**Private PU colleges**	
		N=486		**N=1114**	
		Yes	**No**	**Yes**	**No**
1	OPAC	118 (24.27%)	368(75.12%)	427(38.33%)	687(61.66%)
2	Digital library service	40(8.23%)	446(91.76%)	504(45.24%)	610(54.75%)
3	Computers	304(62.55%)	182(37.4%)	827(74.23%)	287(25.76%)
4	CD/DVD	212(43.62%)	274(56.3%)	408(36.62%)	706(63.37%)
5	Projectors	102(20.98%)	384(79.01%)	317(28.45%)	797(71.54%)
6	Electronic document	53(10.90%)	433(89.09%)	249(22.35%)	865(77.64%)
7	Current awareness service	69(14.19%)	417(85.80%)	200(17.95%)	914(82.04%)
8	Audiovisual service	111(28.83%)	375(77.16%)	352(31.59%)	762(68.40%)
9	E-Books	55(11.31%)	431(88.69%)	141(12.65%)	973(87.34%)

10	E-journals	11(226%)	475(97.73%)	168(15.08%)	946(84.91%)
11	Internet service	217(44.15%)	269(55.34%)	612(54.93%)	502(45.06%)
12	Document searching service	26(5.34%)	460(94.65%)	88(7.89%)	1026(92.10%)
13	Bulletin board service	Nil(0%)	486(100%)	22(1.97%)	1092(98.02%)
14	Library portal service	Nil(0%)	486(100%)	Nil(0%)	1114(100%)

N=486the number of respondents from Government colleges; N=1114the number responded from aided and unaided PU college.

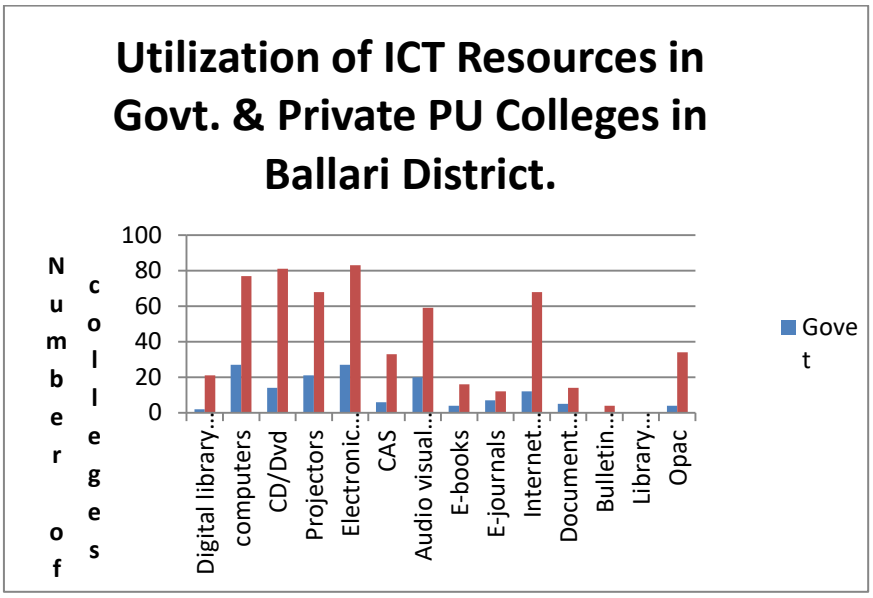

Figure-1. Utilization of ICT resources

As represented through demography from 32 government PU colleges and 85 privatePU collegesutilization is mapped like this the highest usage is computers in government college 84.37% in the private PU college 90.58%. In that internet browsers are 37.5% in government college as in the private it is 80%. The electronic documents are more in the search criterion that is 84.34% and in private 97.64%, no library portal service is availed in government as well as in private colleges.

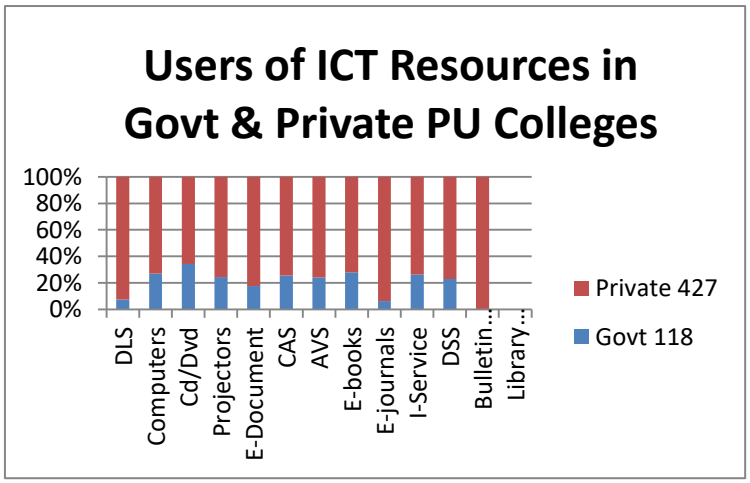

Figure-2. Users of ICT resources

Table-3. ICT Components and Competencies

Sl.no	Description	Collages	No Knowledge	Less Knowledge	Basic Knowledge	Advanced	Expert
1	Computer technology	Govt	0%	51%	22%	17%	10%
		Private	0%	13%	11%	57%	19%
2	Communication Technology	Govt	9%	31%	62%	8%	5%
		Private	0%	5%	7%	36%	52%
3	Multimedia Technology	Govt	42%	12%	21	11	14
		Private	7%	12%	11%	16%	54%
4	Network	Govt	24%	22%	31%	12%	11%
		Private	6%	15%	15%	41%	23%
5	Barcode reading technology	Govt	44%	12%	13%	23%	8%
		Private	22%	13%	14%	36%	15%
6	Reprography	Govt	10%	16%	24%	22%	28%
		Private	0%	0%	15%	44%	41%
7	Technical Communication	Govt	21%	22%	24%	20%	13%
		Private	15%	15%	38%	11%	21%
8	Library Networking	Govt	16%	16%	26%	26%	16%

		Private	6%	8%	22%	29%	35%
9	Library management	Govt	12%	28%	21%	24%	15%
		Private	22%	14%	14%	34%	17%
10	Library automation	Govt	14%	33%	23%	14%	16 %
		Private	14%	24%	14%	24%	24%

Figure-3 shows the competency level reached by users to point out with some components such as computer technology: is known to 49% of government college and 87% of private college students communication technology is familiar to 75% of government and 95% of private college users. Technical communication is concerned 57% of government and 70% ofprivate college users are acquainted with this. Library automation can be handled confidently by 53% of government colleges and 72% of private college users.

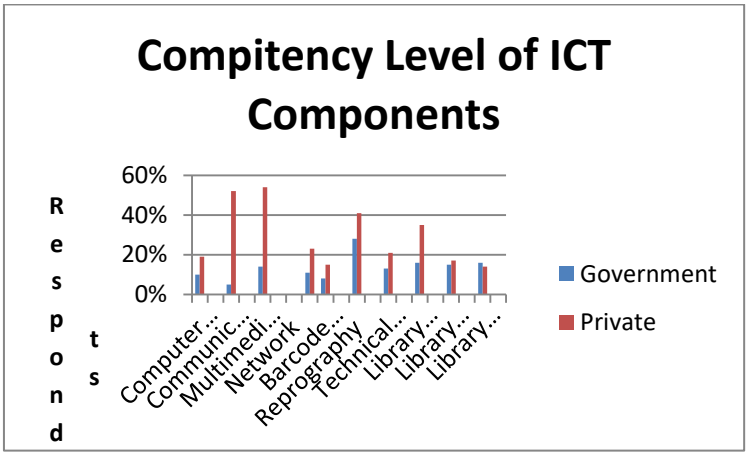

Figure-3. Competency level of ICT components

Observation Finding and Suggestion:

ICT has changed the manual libraries to a superfast 'virtual world'.This mode dramatically changed the channel of communication in libraries. IT introduced new dimensions into the educational process. IT applications involve a big family. The library needs to access computers, electronic devices such as local area networks, hardware and software. Internal storage memory should be with the high processor, multiple software programs are required to acquire and store resources aswell as disseminate and share resources.

To acquire these gadgets huge amount of funds is required. Private institutes allocate separate budget plans for the library. It is possible for them because administrators have belonged to

corporate sectors. They have the capabilities to invest money for institutional developments as well as a collection of fees structure is heavy in private institutions with that they can maintain a library which is well furnished with all ICT products. Government colleges are laggingin acquiring these ICT products and have not succeeded thatmuch in getting their profound advantages. We can say the impact of ICT is less in government colleges. The reason behind this, lack of financial support. The manpower should be sound enough to update all ICT-based data. This is possible in private colleges because institutions are economically sound and there is a lot of pressure and commands and inspections from higher authorities. Administrators are very enthusiastic about creating a learning environment in the shelters of ICT because they have prestigious issues. College strength and quality education, as well as fees structure, is proportionate to it. They reach the target in the race of this competitive world.

Government colleges can't afford this because most of the government colleges even don't have separate buildings for the library. None of the Government college staff has trained or authenticated library staff. No state government has appointed any librarian. No orientation programmers for the persons who are handling this library for inevitability circumstances. No extra manpower is allotted even on daily wages or contract basis.0% of interest is shown to improve library because nobody is ready to handle extra responsibility which is not exactly on their part of the duty. Neither the government servants are answerable to anyone. No issues regarding the reputation of colleges because the government colleges are service-based. It is not corporate-based. No financial incomes are expected out of it.

library patrons should also have equal knowledge to access information. Then only ICT can be successfully utilized.

This is noticed in private PU colleges in this area. They maximized the utilization because students have prior knowledge of handling multidimensional technologies before entering PU college so nothing is new to them and another addition is the students in private colleges who have opted for science and commerce are required more information through ICT. These Combination students are found in maximum number in private collages so the library has provided them what do they deserve.

In government colleges, users of the library are concerned, they are students and faculty. Students' priory doesn't have that much technical knowledge because their educational background didn't provide this. Most of the students expressed their regret for the language barrier while processing software instructions. Secondly 78% students mass belongs to *arts* combination they are satisfied with manual textbooks which are readily available in their library. Their study is based on the theoretical approach. They don't feel like digging through the internet.

ICT transformed the world into a global village with the help of ICT any aspirant can get information even in a remote place. It can communicate individually to a large group with video conferencing, shared virtual workshops, networked scientific facilities data basis will increase the efficiency and effectiveness of users understanding.

Especially in this COVID 19 environment, a much more preferred media of communication is ICT. It helped in bridging the gap between social distancing and securing everyone's life equally communicating accurately through virtual media. This can be considered the highest impact of this era due to the COVID 19 environment.

Limitations of ICT

- Information can be created only with human cognitive capabilities that kind of the individuals is less in the social system.
- Handling this information in the compartment of technology needs equally high skilled creative professionals. There is a scarcity of such professionalism, especially in this district.
- Possession, manipulation, and the use of information are cost-effective. There is no economic fitness. These expenses are not met so easily by the economical backdrop in the circumstances
- Publishing, marketing the information should take place in strict societal concern. It is very difficult to cross the traditional domain transcend to the ICT domain.
- Resources of the libraries,its archives, organizationalinstitutional and government information are not that easy to get license politics to place the role at the one hand and the libraries policies are very strict at the other hand.

- Communicative canons through ICT have many barriers as mentioned above and the major barrier is high-width network communication.That is not available in many colleges. Which is turned the whole system good for nothing.
- Setting the system of the library under the umbrella of ICT should be done with collective consciousness.That needs patrons dedication, devotion, and passion

Hypotheses testing Results:

H1: Impact of ICT may not be noticed in all the colleges.

Result: According to the statical quantitative data analysis the result of testing this hypothesis is the impact is noticed only in 10colleges(8.5%) out of 117 colleges the rest of 107(91.55%) colleges didn't have any impact so it can be concluded as most of the colleges91.55%has not been noticed the impact of ICT so the hypothesis is nearly similar to the evidenced fact.

H2: There may be awareness among users about the benefits of ICT for seeking information.

Result: The available data are 496 respondents from faculties and 1600 respondents from students among them all the faculties 496(100%) and 1200 (75%)students are aware of the benefits of ICT but 400(25%) student respondents are not aware of the benefits of ICT. It can be interpreted as 75% of users aware of benefits of ICT still 25% users need to know the benefits of ICT for seeking information.

H:3 There may be high demands for initiating ICT based Library.

Result: It is clear from the fact that among 1600students respondents 1300(81.25%)felt high demand for initiating ICT based library but 300(18.75%)respondents ICT impacts are not influenced as for the faculties responses are concerned among 496 faculties 300(60.48%)felt high demands for initiating ICT based library but 196(39.52%)are neutral. It can be decided students users of library are demanding for initiating ICT based library.

H:4 There may be shortage of budget in implementing ICT in library.

Result: Among 40library staff 28(70%) respondents agree with this statement the rest of 12(30%) deny the statement. Inference is budget plays a major role in implementing ICT

H5: Orientation is the best method of advancement of ICT.

Result: It is made known from the fact available through data of students, faculties, librarians including all the private colleges and government colleges, among 486 respondents of government college 392(80.65%) respondents felt orientation is very much necessary and among 1114 respondents of private college 1090(97.84%)respondents felt orientation is as important as implementation. The Inference is orientation is helpful for advancement of ICT

Conclusion

We would like to conclude this article with these observations.

The uses of ICT in the library are remarkable. No patrons should be away from such functional applications. No individual wants to be marginalized by such organized structures. PU college education is unique in itself because they are the harbingers of a new era. By the education with appropriate skills and knowledge, they can bring positive changes in the society they are young buds the seeds of social structure can be properly constructed here. The fundamental preparation for their carrier initiation and personality development takes place in these screens.

In the Ballari district PU colleges, we can notice the implementation of ICT as well as its positive impacts but utilization is on an average scale. We would like to utter it as "It is still in the cradle hood stage".

Private PU colleges struggling hard to move forward by crossing all the obstacles while Government colleges set themselves free by not bothering that much by reasoning it to escape. That seriously damages the under hidden voice and talents of the learner.

Moreover, to create an ICT-based library and effective management requires financial support that should be fulfilled by concerned authorities.

Private PU colleges giving their 100% effort over this issue while government PU colleges are helpless in this matter and also the reach is beyond their limits.

Utilization of ICT should be a collective consciousness. Authority needs to galvanize their potentialities to make this dream possible by influencing them and inculcating the behaviors with their combatants. If this takes place seriously, it surely gives fruitful results on the intellectual faculties of the library patrons.

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