



**LIBRARY SYSTEM AND SERVICES IN ENGINEERING COLLEGES
WITH SPECIAL REFERENCE TO GOA STATE**

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Abstract:

The study attempted to analyse the library system of engineering colleges affiliated with Goa University. The survey was carried out with the objectives of assessing the present status of the library staff, sources and services and the current status of library automation available in the libraries of engineering colleges in the Goa state. Based on the result of the study, it is recommended that librarians take the initiative to make the library fully automated and develop a rich collection of e-resources. All engineering college libraries should give importance to maintaining a digital Institutional Repository and provide web-based OPAC service keeping in mind the need of the academic community.

Keywords: *College Library, Goa University, Information Sources and Services, Library Automation, Electronic Resources*

Introduction:

The library is the heart of education institutions. College library plays a vital role in the higher education system. Well-equipped and well-managed library is the foundation of modern education structure. No college library is self-sufficient; it has to develop its collection by participating in library networks or resource sharing. Responsibilities of the librarian have tremendous change with the change in services and technological applications. To fulfil various needs of the students in the present digital era, librarians must enhance resources and services with the best possible modern applications.

Start of internet, web interface, and digital content led to the improvement of

online academic resources and the transformation of practice of scholarly communications. Libraries have no exception in acquiring and delivering modern ICT based sources and services to the users. Keeping in mind the quick and selective user need, librarians' need to aware of modern ICT based applications to build library technically competitive.

In this present blended education system, every student is aware of ICT based information sources and services available worldwide. It is the responsibility of college librarian to build their collection in both print and digital form. Students are moving towards digital content. College librarian should take initiative to built their library with maximum possible technological

applications like web OPAC, use of LAN/WAN, e-books, e-journals, automation, digital content development, databases subscription, build IR etc. These innovations have positive impact on higher learning or education in particular. Ever growing technological innovation in all sectors of the education has changed the way or the methods of imparting knowledge. At the same time, use of internet has changed the way of access and dissemination/accumulation of knowledge by students. Today's student is more self-learner has control over their own learning, self-searching and access to information in easy way with the help of internet and digital content. To meet the need in higher learning, college library must equip with variety of ICT based infrastructure, sources and services. Along with developing print collection, e-books, e-journals, e-database subscriptions, participation in networking of libraries, building Institutional Repositories have become integral part of academic library.

Engineering Education in Goa – A

Brief:

Goa College of Engineering was the first engineering college established in Goa after liberation from Portuguese rule in 1967. It is abbreviated as GEC. College started with undergraduate courses in mechanical, Civil and Electrical engineering. Later more undergraduate courses were introduced like Electronics and Telecommunication, Computer Science, Information Technology and Mining Engineering. Presently college offers nine post graduate programmes. The affiliation to PhD programme in Civil, Mechanical, electrical & Electronics, Computer Science & Engineering and Electronics & Telecommunication

Engineering are recognized from academic year 2014-2015 onwards.

On 9th June 1957, Father Agnel Ashram was founded in Bandra, Mumbai, at a place called Lands end. It started with an orphanage and trade school in carpentry and later was upgraded to an industrial training institute, a polytechnic and an engineering college. In 1979 a branch was opened in Verna Goa and New Delhi. The organization established Padre Conceicao College of Engineering (PCCE) at Verna Goa in 1997. After three decades of waiting, the State of Goa bloomed with a second engineering college. The college offers undergraduate courses in Mechanical Engineering, Computer Engineering, Electronics and Telecommunication Engineering, Information Technology and postgraduate courses in the discipline of Information Technology.

Shree Rayeshwar Institute of Engineering & Information Technology (SRIEIT) is a private college established in 2001. It operates under the parent organization of Shivgram Education Society. The Fatorda Salesian Society is a registered society in the State of Goa and is part of the worldwide society of DON BOSCO, with branches in over 100 countries. In India, about five hundred institutes of DON BOSCO society are engaged in youth education. The Fatorda Salesian Society established an engineering college in Goa and has been operational since 2011. With the steady efforts of Agnel Ashram Fathers, the Agnel Institute of Technology & Design was established and started its operations in 2012. All courses offered by these five colleges are affiliated with Goa University.

Whereas, other central and private engineering institutes like Indian Institute of Technology, National Institute of

Technology and Birla Institute of Technology and Science are also running in Goa.

Objectives of the Study:

1. To assess the present status of the library system and services (Library Staff, Sources and Services) available in the libraries of engineering colleges in Goa state.
2. To analyse/assess the present status of library automation.

Review of Literature:

Chowdhary (2017) in his study, Role and services of college library with special reference to Nagaon district of Assam (India): a Study reveals that there is increased services and acceptance of e-resources by the college community. Librarian and college authority should take initiative for the development of services to a great extent which will enhance reputation of institutes. Continuous monitoring of modernization activities and services of libraries is prerequisite for meeting future needs.

Nayana (2019) summarised status view of the library management software packages and modules used for library automation. The study mainly focused on the availability, applicability and problems faced during the process of Library

automation. It is observed main problems faced by the librarian during automation process are inadequate staff, lack of infrastructure, insufficient funds and lack of training to library staff.

Wagle (2017) study focused on usage pattern of electronic database and e-journals. Study concluded from user view point more titles should be added and made available online. Academic libraries should give importance to subscription of online edition of resources, where it can fulfil the information needs of the academic community.

Scope and Limitations:

The scope of the study is limited to the librarians of engineering colleges of Goa State. The study is limited to the five Engineering colleges of Goa, affiliated with Goa University only.

Methodology:

The survey Method was used for primary data collection by the researcher. Well-structured questionnaires were distributed to all the librarians of engineering colleges of Goa affiliated with Goa University, and the interview method was followed for more clarity. Collected Data tabulated and analysed entirely based on the feedback received from the respondents.

Data Analysis and Interpretation:

Table 1 - Year of Establishment of Colleges and their Libraries

Name of the Institutions	Year of Establishment
Goa College of Engineering (GEC)	1967
Padre Conceicao College of Engineering (PCCE)	1997
Shree Rayeshwar Institute of Engineering & Information Technology (SRIEIT)	2001
Don Bosco College of Engineering (DBCE)	2011
Agnel Institute of Technology and Design (AITD)	2012

Table No.1 shows the year of establishment of colleges and their libraries. In 1967, the first engineering college was established in the State of Goa i.e. Goa College of Engineering, followed by Padre Conceicao College of Engineering in 1997. Shree Rayeshwar

Institute of Engineering & Information Technology was established in the year 2001. Don Bosco College of Engineering and Agnel Institute of Technology and Design were established recently in the year 2011 and 2012, respectively.

Table 2 - Head of the Library and Their Highest LIS Qualification

Name of the Institutions	Designation of Head of the Library	Qualifications
Goa College of Engineering	In-charge Library	MA, BLISC
Padre Conceicao College of Engineering	Librarian	MLISC, Mphil
Shree RayeshwarInstitute of Engineering & Information Technology	Librarian	MLISC
Don Bosco College of Engineering	Librarian	PhD
Agnel Institute of Technology and Design	Librarian	MLISC

Table No. 2 indicates out of the five colleges, in four college libraries, librarian is the head of the library i.e in Padre Conceicao College of Engineering, Shree Rayeshwar Institute of Engineering & Information Technology, Don Bosco College of Engineering and Agnel Institute of Technology and Design. Out of five college librarian, the librarian of DBCE is

highly qualified having the degree of Doctor of Philosophy (Phd), librarian of PCCE has highest professional qualification of Master of Philosophy (MPhil). Librarian of SRIEIT and AITD has a degree of Master of Library and Information Science. In GEC In-charge library is the head of the library with BLISC qualification.

Table 3 - Designation-wise Distribution of Library Staff

Designations	GEC	PCCE	SRIEIT	DBCE	AITD
Librarian	-	✓	✓	✓	✓
In-charge Library	✓	-	-	-	-
Assistant Librarian	✓	-	-	-	-
Library Assistants	✓	✓	✓	✓	✓
System Administrator	-	-	-	-	-
Data Entry Operator	-	-	-	-	-
Clerks	-	✓	-	-	-
Peons	-	-	-	✓	-
Library Attendants	✓	✓	✓	-	✓

Regarding the distribution of library staff, it is evident from above table No.3 out of the five college libraries 80% libraries have full time librarian, whereas one library has In-charge library and assistant librarian who carry out the duties of librarian. All five libraries under the

study are having library assistants. Additionally one library has a clerk and one library has a peon. Out of five libraries, four libraries are having library attendants. Not a single library has system administrator and data entry operator in its staff.

Table 4 - Categories of Users

Category of Users	GEC	PCCE	SRIEIT	DBCE	AITD
Faculty Members	✓	✓	✓	✓	✓
PG Students	✓	✓	-	-	-
UG Students	✓	✓	✓	✓	✓
Administrative Staff	✓	✓	✓	✓	✓
Non Teaching Staff	✓	-	-	-	-

Above Table No. 4 indicates data pertaining to category of users in all five college libraries under the study. It is evident from above table, 100% libraries are having users of faculty members, UG

students and administrative staff. PG students are the user of 40% libraries and 20% library has Non- Teaching Staff in its user category.

Table 5: Collection of Books (Printed) in the Library

Number of Printed Books in the Library	GEC	PCCE	SRIEIT	DBCE	AITD
1000 to 5000	-	-	-	-	-
5001 to 10000	-	-	-	-	✓
10001 to 20000	-	-	✓	✓	-
20001 to 30000	-	✓	-	-	-
30001 to 40000	-	-	-	-	-
40001 to 50000	-	-	-	-	-
Above 50000	✓	-	-	-	-

Books are the prime collection of any library. Table No. 5 indicates that out of five college libraries, AITD has a total number of books ranges from 5001 to 10000. Collection of printed books in

SRIEIT and DBCE ranges between 10001 to 20000. Total number of books in PCCE library ranges between 20001 to 30000. GEC library has a rich collection of above 50000 books.

Table 6 - Collection of Different Reading Materials in the Library

Reading Materials		GEC	PCC	SRIEIT	DBCE	AITD
Books		✓	✓	✓	✓	✓
e-Books		✓	✓	✓	✓	✓
Journals/Magazines	Print	✓	✓	✓	✓	✓
	Online	✓	✓	✓	✓	✓
Back Volumes of Journal		-	-	-	✓	-
Project Reports		✓	✓	✓	✓	✓
Theses/Dissertations		✓	✓	-	-	✓
e-databases		✓	✓	✓	✓	✓
Audio-Visual Collections		✓	-	✓	-	✓
Gazette Notification		✓	-	-	-	-
Scientific/Technical Reports		✓	-	-	-	-
Digitized Documents		-	✓	✓	-	✓

With regards to different collection of reading materials, above table reveals that 100% college libraries under the study do have collection of books, e-books, print journals, project reports and also have subscriptions of e-journals and e-databases. Out of five college libraries 60% libraries have theses and dissertations, 60% of college libraries have

audio-visual collection and digitized documents. Only 20% of libraries' collection contains back volumes of journals, gazette notification and scientific/technical reports. It is observed from the survey, majority of the college libraries are not maintaining back volumes of journals, gazette notification and scientific/ technical reports.

Table 7 - Availability of Computer/ PCs for Users in the Library

No. of Computers	GEC	PCCE	SRIEIT	DBCE	AITD
1-5	-	-	-	-	-
5-10	-	-	✓	-	-
11-15	-	✓	-	-	✓
16-20	✓	-	-	-	-
21-25	-	-	-	-	-
26-30	-	-	-	✓	-
Above 30	-	-	-	-	-

Today's user not only needs paper and books from the library but PCs as well to have access to information. Availability

of computer system is also an essential part of library to provide efficient services to the users. The survey indicates that out

of five college libraries, SRIEIT and GEC library have 5 to 10 PCs and PCs ranges between 16 to 20 for users respectively. PCCE and AITD libraries have made total number of PCs available for users' ranges

between 11 to 15. It is evident from the study that DBC library is well equipped with ICT infrastructure having total PCs of about 26 to 30 for its users.

Table 8 - Different Sections in the Library

Sections in the Library	GEC	PCCE	SRIEIT	DBCE	AITD
Reading Room	✓	✓	✓	✓	✓
Reference Section	✓	✓	✓	✓	✓
Periodical Section	✓	✓	✓	✓	✓
Theses Section	-	-	-	-	-
Special Section for e-Resources	✓	✓	✓	-	✓

Table No. 8 indicates different library sections available in college libraries under the study. It is observed that all five libraries have separate reading room, reference section and periodical

section. And four libraries have special section for e-resources. It is clear from the data that not a single library maintains a separate section for theses.

Table 9 - Use of Integrated Library Management Software

Library Management Software	GEC	PCCE	SRIEIT	DBCE	AITD
eGranthalaya	-	-	✓	✓	-
NewGenLib	-	✓	-	-	✓
LIB MAN	✓	-	-	-	-

Table no. 9 is about Integrated Library Management Software installed in libraries under the study to carry out day-to-day housekeeping operations like cataloguing, circulation. SRIEIT and DBCE libraries are using eGranthalaya Software, where

asNewGenLibis being used by other two college libraries i.e. PCCE and AITD. In GEC library LIB MAN software is used to perform housekeeping operations of the library.

Table 10 – Status of Automation/ Use of ILMS Modules

Library Management Software	GEC	PCCE	SRIEIT	DBCE	AITD
Acquisition	✓	-	✓	-	-
Cataloguing	✓	✓	✓	✓	✓
Circulation	✓	✓	✓	✓	✓
Serial Control	✓	-	✓	-	-
Administration	✓	✓	✓	-	✓
OPAC	✓	✓	✓	✓	✓

Table No. 10 reveals status of automation of library housekeeping operations. It is been tried to find out what all are the modules of ILMS are being used by college libraries under the study. 40% libraries are using acquisition module of its ILMS and have automated its acquisition process. Similarly 40% libraries are using serial control module of its ILMS. It is found that out of five libraries 60 % of libraries are following manual method of maintaining acquisition

and serial record and not automated their acquisition and serial management process through ILMS. 100% libraries have automated their issue/ return, reservation, cataloguing process and are using cataloguing and circulation module of its ILMS. 80% of libraries are using administration module of its ILMS. All five libraries are using OPAC module of their ILMS and have automated their Open Public Access Catalogue (OPAC).

Table 11 – Availability of e-Resources

e-Resources	Numbers	GEC	PCCE	SRIEIT	DBCE	AITD
e-Books	1001 to 2000	-	-	-	-	-
	2001 to 3000	-	✓	-	-	✓
	3001 to 4000	✓	-	-	-	-
	4001to 5000	-	-	-	-	-
	Above 5000			✓	✓	
e-Journals	100 - 500	-	✓	-	-	-
	501 - 1000	-	-	-	-	-
	1001 - 1500	-	-	✓	-	✓
e-Databases	1-5	-	✓	✓	✓	-
	5-10	✓	-		-	-
Consortia Subscription	1-5	✓	✓	✓	-	-

In case of e-resources availability, all engineering college libraries have

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collection of e-books, e-journals, e-databases and consortium subscription.

40% of libraries e-book collection is ranges between 2001 to 3000, 20% of libraries having 3001 to 4000 and 40% of libraries have a good collection of e-books above 5000. Out of five libraries 40% of college libraries have not subscribed e-journals. 40% libraries have e-journal subscriptions of which total number ranges between 1001 to 1500 and 20% of libraries

have 100 to 500 subscriptions of e-journals. 60% libraries under the study have subscribed about 1 to 5 e-databases and 20% library has 5 to 10 e-databases subscriptions. 20% libraries have not subscribed any e-databases. It is observed from the above table 60% of libraries have membership of library consortium, 40% do not have any consortium membership.

Table 12 Institutional Repository (IR)

Availability of Institutional Repository (IR)	GEC	PCCE	SRIEIT	DBCE	AITD
Yes	-	✓	✓	-	✓
No	-	-	-	-	-
Use of IR software					
Dspace	-	✓	-	-	✓
Eprint	-	-	-	-	-
Other	-	-	-	-	-

Table No. 12 shows data about availability of Institutional Repository in engineering college libraries. It is observed that out of five libraries PCCE, SRIEIT are maintaining digital library and both college libraries are using Dspace IR

software. Whereas SRIEIT has maintained IR but responded for the name of IR software. GEC and DBCE have not initiated the process of maintaining institutional repositories.

Table 12 - Different Services Available in the Library

Services in the Library	GEC	PCCE	SRIEIT	DBCE	AITD
Reference Service	✓	✓	✓	✓	✓
Circulation Service	✓	✓	✓	✓	✓
Bibliographic Service	✓	-	✓	-	-
Current Awareness Service	✓	✓	✓	✓	✓
Internet Facilities	✓	✓	✓	✓	✓
OPAC	LAN/WAN	✓	✓	✓	-
	Web- OPAC	-	-	-	✓
Reprographic Services	✓	✓	✓	✓	✓
Book Bank	✓	✓	✓	✓	✓
Inter Library Loan	✓	✓	-	-	✓
E-mail Service	-	-	✓	✓	✓

Table No. 12 indicates data of varied services available for users in college libraries under the study. All five i.e. 100 % of libraries are providing reference, circulation, current awareness, internet facilities, reprographic and book bank services to their users. Similarly all

five libraries provide OPAC service, out of which 80% of them are providing OPAC through LAN/WAN and remaining 20% of libraries have web based OPAC service. 40% of library provides bibliographic service. 60% of college libraries provides inter library loan and E-mail services.

Findings:

1. For about 30 years, GEC was the only engineering college in Goa; after that PCCE and SRIEIT were established. Recently a decade ago, DBCE and AITD colleges were established.
2. Regarding qualification, DBCE and PCCE librarian has the highest qualification of Doctor of Philosophy (PhD) and Master of Philosophy (MPhil), respectively.
3. The study indicates that 80% of the survey's college libraries have full-time librarians.
4. The study reveals that all five college libraries under the study have less than five library staff.
5. As far as collection of books, 20% library has a rich collection of books above 50000. 60% of libraries' collection ranges between 10000 to 30000. One library has 5000 to 10000 books in its collection.
6. All college libraries under the study have a collection of books, e-book, sprint/e-journals and project reports. Only 20% of libraries maintain gazette notifications, scientific/technical reports and back volumes of journals.
7. In the case of PCs available for users, the majority of libraries have less than 20 PCs for users. Only DBCE has above 25 PCs for users.
8. All five libraries have separate reading room, reference section and periodical section. 80% of libraries have special section for e-resources. No library has maintained separate section of theses.
9. Out of five, two college libraries are using eGranthalaya and other two are using NewGenLib ILMS. GEC library is using LIB MAN ILMS for housekeeping operations.
10. All five libraries using cataloguing, circulation and OPAC module of ILMS. Comparatively serial control and acquisition module are less used.
11. With regards to e-Resources majority of libraries under the study are maintaining e-books, e-journals, e-databases. 60% have membership of library consortium.
12. As far as Institutional Repository (IR) is concern, 60% of college libraries are maintaining IRs and Dspace IR software is highly utilised for digital library.
13. Most libraries provide their users a references service, circulation, current awareness, internet facilities, OPAC, reprographics, Book bank, Interlibrary loan, and e-mail services.
14. As far as OPAC is concerned, only the AITD library has a web-based OPAC service, and the other four

libraries provide OPAC service through LAN/WAN connections.

Recommendations:

1. All colleges should recruit professionally qualified full time librarian and library staff strength should be increased.
2. All users of the libraries under the study are technically familiar, librarian should take initiative to make library fully automated with maximum utilisation of modules available in ILMS.
3. All engineering college libraries should maintain digitized format of college research works and develop e-resources. It is suggested that all libraries should give importance to maintain its Institutional Repository.
4. OPAC is an importance source of information available in any library. In present blended learning environment it is important to make OPAC service available within and outside campus also. Libraries should provide web based OPAC service to users for easy and 24*7 accessibility to library sources.

Conclusion:

In the present information technology era, the automation of libraries is a crucial part of any institution. It is a fact that no academic library can be self-sufficient to fulfil the rising needs of the users. Consortia participation and consortium-based services are pre-eminent solutions to deliver maximum efficient services with limited sources. Academic learning is shifting towards online learning, so it has become a prerequisite to providing maximum possible sources and services on the world wide web for better accessibility to information.

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