

# **An EP Journal of Vocational and Technical Education**

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# **An EP Journal of Vocational and Technical Education**

## **Aims and Scope**

An EP Journal of Vocational and Technical Education is a fully-refereed Journal concerned with developments in vocational and professional education and training. The journal welcomes submissions involving a critical discussion of policy and practice as well as articles based on empirical research and analysis. The focus is on policy, learning processes, assessment and accreditation in professional and vocational education rather than on any specific institutional or social context. Consequently, articles which address any aspect of formal or informal vocational learning in any tier of an education system will be reviewed. The journal has a well established international audience, and contributors are requested to bear this in mind when framing their submissions.

# **An EP Journal of Vocational and Technical Education**

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# Open Educational Resources (OERs): An Indian Perspective

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## **ABSTRACT**

*The main aim of education is sharing and OER has the potential to fulfill the first and foremost aim of education. OERs have the potential to provide the life-long learning. OERs are the digitized objects that are available free for students, learners and teachers to use and reuse in teaching and learning. These digital objects are licensed under creative commons license. Creative commons licenses give everyone from individual creator to institutions to grant copyright permission to others and get credit for their work while allowing others to use, copy and distribute. Licensors have liberty for choosing from wide range of options which permission to grant and uses to allow. Creative Common licenses help in the proliferation of OER at international and national level. At international level wide range of OER initiatives and projects are running. The major initiatives include MIT OCW, Connexions project, Open Learn Initiative, MERLOT etc. India is also gaining momentum in Open access initiative with the launch of National Repository of Open Educational Resources (NROER), National Programme of Technology Enhanced Learning (NPTEL), Sakshat, Project OSCAR etc. The present paper provide information on historical declaration supporting OERs and its development at International and national level. The paper also discusses the various drivers and barriers in the development of OERs.*

**Keyword:** *Open Educational Resources (OERs), NROER, NPTEL, Creative Commons, Paris Declaration*

## **INTRODUCTION**

Education is first and foremost an enterprise of sharing. Without sharing, no education is happening. Open educational resources fulfill the main aim of education that is sharing (Wiley, Green and Soares, 2012). Open Educational Resources (OERs) removes the economic, geographic and demographic boundaries which create the major hindrance in achieving the aim of the education. The OERs have the potential to provide the life-long learning. The development of Open Educational Resources revamps the teacher-taught relationship. The underlying philosophy on which OER is based is that knowledge should be available free of cost to users on the internet. The Open Educational Resource movement

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which began in 1990s with the launch of MIT Open Courseware Initiative (<http://ocw.mit.edu/index.htm>) is known by various names as Open Content, Open Educational Content, Open learning Resources, Open Educational Technologies, Open Academic Resources and Open Courseware, but the term known by its present name after UNESCO adopted it in 2002. (Lane, 2012)

## Definition

The Organization for Economic Co-Operation and Development (OECD) in its report Giving knowledge for Free: The Emergence of Open Educational Resources define OERs as “digitized materials offered freely and openly for educators, students, and self-learners to use and reuse for teaching, learning, and research. To clarify further OER includes learning content, software tools and implementation resources.” (OECD, 2007, p.30-31)

The William and Flora Hewlett Foundation adopt a similar definition: “OER are teaching, learning and research resources that reside in the public domain or have been released under an intellectual property license that permits their free use and re-purposing by others. Open educational resources include full courses, course materials, modules, textbooks, streaming videos, tests, software, and any other tools, materials, or techniques used to support access to knowledge.” (Atkins, Brown & Hammond, 2007) Wiley, Green and Soares (2012) defines the Open Educational Resources: “Open educational resources are educational materials-textbooks, research articles, videos, assessments, simulations-that are either licensed under an open copyright license- for example, Creative Commons-or in the public domain. In both cases you have free (no-cost) access to the OER and free (no-cost) permission to engage in the “4R” activities when using them.” The 4R activities include:-

- ❖ Revise: adapt and improve the OER so it better meets your needs
- ❖ Reuse: use the original or your new version of the OER in a wide range of contexts
- ❖ Remix: combine or “mashup” the OER with other OER to produce new materials
- ❖ Redistribute: make copies and share the original OER or your new version with others.

## Historical Declaration Supporting OERs

The word Open Educational Resources was coined by UNESCO in 2002. UNESCO's 2002 Forum on Open Courseware defines the term Open Educational Resources as “teaching, learning and research materials in any medium, digital or otherwise, that reside in the public domain or have been released

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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.”Since 2002, many declarations and guidelines developed to support the Open education Resource movement such as 2007 Capetown Open Education declaration describes OER as a driving force which revolutionized the teaching and learning with educators developing the educational resources for free use to all, 2009 Dakar declaration on Open educational Resources (UNESCO, 2012). In 2011 Commonwealth of learning and UNESCO Guidelines on Open Educational Resources in Higher Education provide a set of guidelines to support governments, teaching staff, higher education institutions/providers and quality assurance/accreditation and recognition bodies.

The guidelines for the government include the following:

- a) Support the use of OER through the revision of policy regulating higher education.
- b) Contribute to raising awareness of key OER issues.
- c) Review national ICT/connectivity strategies for higher education.
- d) Consider adapting open licensing frameworks.
- e) Consider adopting open format standards.
- f) Support institutional investments in curriculum design.
- g) Support the sustainable production and sharing of learning materials.
- h) Collaborate to find the effective ways to harness OER. (Stacey, 2013)

The world OER congress was held at UNESCO Paris on 20-22 June, 2012. The congress developed the 2012 Paris OER declaration which includes the following ten recommendations:

- a) Foster awareness and use of OER.
- b) Facilitate enabling environments for use of Information and Communication Technologies (ICT).
- c) Reinforce the development of strategies and policies on OER.
- d) Promote the understanding and use of Open licensing framework.
- e) Support capacity building for the sustainable development of quality learning materials.
- f) Foster strategic alliances for OER.
- g) Encourage the development and adaptation of OER in a variety of languages and cultural context.
- h) Encourage research on OER.
- i) Facilitate finding, retrieving and sharing of OER.
- j) Encourage the open licensing of educational materials produced with public funds.(UNESCO, 2012, p.1-2)

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## Creative Common License and OER

Creative Commons (CC) is not for profit organization providing legal umbrella to copyright owners to make their work available as possible with the minimum copyright restrictions. (Bissell, 2009) Creative commons licenses give everyone from individual creator to institutions to grant copyright permission to others and get credit for their work while allowing others to use, copy and distribute. Licensors have liberty for choosing from wide range of options which permission to grant and uses to allow. There are series of Creative Common licenses like:

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- **CC BY-NC-ND:** This license allows others to download the works and share with others as long as the original creator is acknowledged. This license prohibits the commercial use of the work and does not allow any derivative work to be made. This license is the most restrictive of the licenses. (Creative Commons, 2011)



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## Open Educational Resources Initiatives

### International Level

There is enormous development of OERs at international level which include MIT Courseware (<http://ocw.mit.edu>), Rice University's Connexions project (<http://cnx.org>), State of Washington's Open Course library (<http://www.opencourselibrary.org>), Peer to Peer University (<http://p2p.org>), OER University ([http://wikieducator.org/OER\\_University/Home](http://wikieducator.org/OER_University/Home)), University of People (<http://www.uopeople.org>), Open Learn initiative (<http://openlearn.open.ac.uk/>) by UK open University, USU OCW (<http://ocw.usu.edu/>) Utah State University initiative, Open Learning Initiative (<http://www.cmu.edu/oli/>) developed by Carnegie Mellon University, MERLOT (Multimedia Educational Resources learning and Online Teaching) developed by the California State University for distributed learning (<http://www.merlot.org/merlot/index.htm>), Open Courseware Consortium (<http://www.ocwconsortium.org>) is a consortium resulted from collaboration with more than 100 higher education institutions and associated organisations from around the world with the main mission of providing OERs to worldwide community using shared model, Japan OCW Consortium (<http://www.jocw.jp/>), China Open Resources for Education (CORE) Consortium of 222 university members provide 750 courses ([http://www.core.org.cn/cn/jpkc/index\\_en.html](http://www.core.org.cn/cn/jpkc/index_en.html)). (Yuan, Li., MacNeill, Sheila and Kraan, Wilbert)

### National Level

#### **National Repository of Open Educational Resources (NROER) (<http://www.nroer.gov.in>)**

NROER is developed by Department of School Education and literacy, Ministry of Human Resource Development a digital repository houses a wide variety of educational resources on all subjects and all grades for school students, teachers and other stakeholders. NROER provides opportunities to teachers to upload the content developed by them and rate the content available on the website. National Repository of Open Educational Resources was launched by the Honorable HRM Dr. M. M. Pallam Raju on 13 August, 2013 on the first day of the National Conference on Information and Communication Technology (ICT) for school education. The repository is build upon an open source software Gnowsys-studio kernel by HomiBhabhacentre for Science Education, TIFR.

The main mission of the NROER is to store, preserve and provide access to variety of digital resources for students and teachers, and to enable participation of the community in development and sharing of digital resources. NROER digital repository organized the subjects and subjects again subdivided into

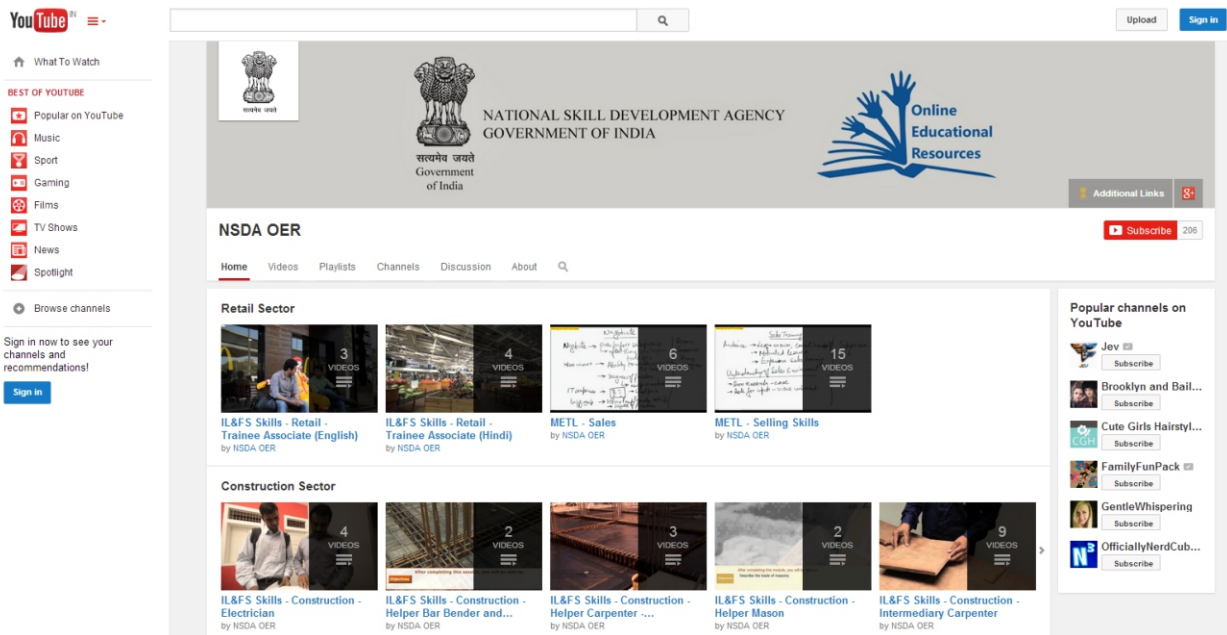
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concepts. The repository includes videos, interactive objects, graphics, images, audios etc. The content of the repository available under CC BY SA license which is the most liberal form of the license and also known as Open content. (NROER brief)



NSDAOER (<http://www.nsda.gov.in/content/oer/>)

NSDAOER is the YouTube portal of National Skill Development Corporation. The NSDA is engaged in creation of the open educational resources for vocational, technical and other skills. These OERs helps in enhancing the skills of the users. OERs have been created by other parties thus; intellectual property rights are vested with them. Users while referring and using these resources must acknowledge the original creator according to the copyright terms and conditions associated with them. Sector Skill Councils (SSCs) provides assistance to NSDA in categorizing the material into the sectors considering the various levels of 'Qualification Packs' (QP) and the 'National Skills Qualification Framework' (NSQF). The material that has been vetted by SSCs comes in sectors like Agriculture, Automotive, BFSI, Electronics, Fabrication, Logistics and security and safety. The material that has not been vetted by SSCs comes in the sectors like: Beauty and Wellness, Handicraft and Carpet Making, Management and Textiles and Apparel. The main advantage of the use of OERs in vocational and technical education is that it helps in enhancing the skills, improves the teaching- learning methods and reduces duplication of efforts in developing these resources i.e., human, financial and institutions. (Dutta and Ray, 2015)



National Mission in Education through Information and Communication Technology (NME-ICT)  
<http://www.nmeict.ac.in/Document/Missiondocument.pdf>

The main objective of the mission is to connect all institutions of higher learning to the world of knowledge in cyber space to leverage the potential of ICT to provide quality knowledge with right e-contents. The main philosophy of the mission is:

- a. No talent of the country should be allowed to go waste;
- b. All the services available through content delivery portal namely Sakshat should be free and ;
- c. Freely available material on the web should be used so as to avoid reinventing the wheel.

National Institute of Open Schooling (NIOS)

The National Institute of Open Schooling has used the Open Educational Resources for imparting vocational training to students at secondary and senior secondary stages. The open educational resources will be very beneficial for the learners pursuing their studies through open and distance learning (ODL). The main objective of the project is to develop and deliver vocational educational supported by open educational resources. At present OER are developed in three subject areas viz:

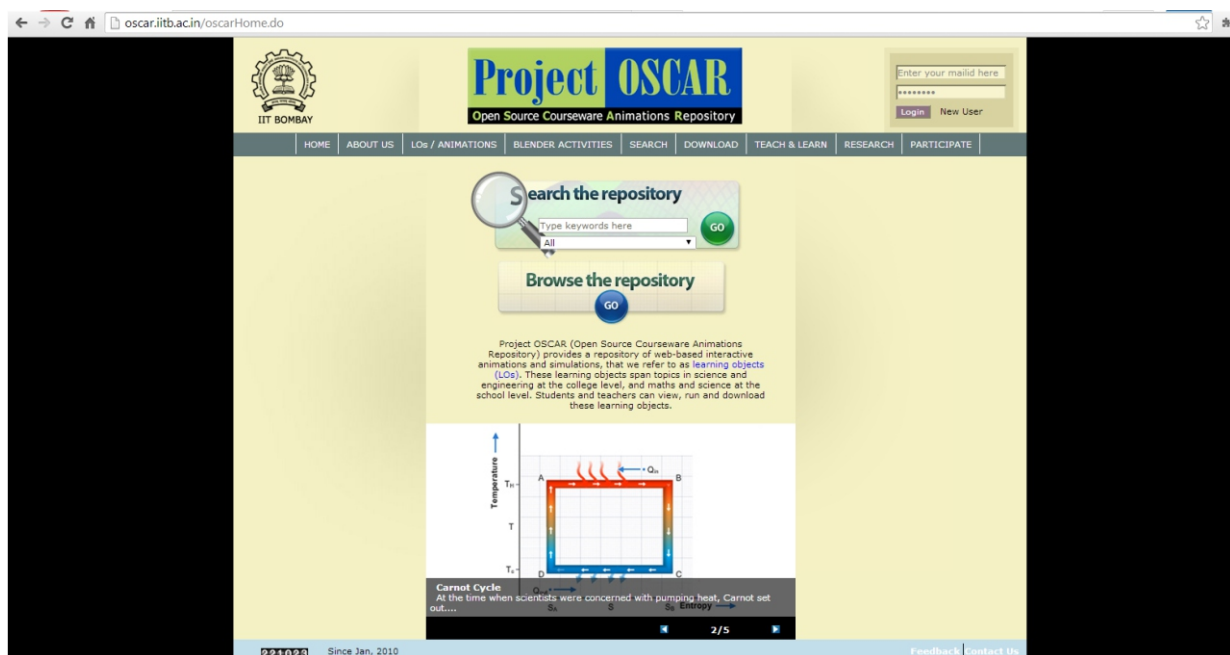
- a. ICT applications-Vocational Course at Senior secondary level
- b. Rural Technology
- c. Tourism and Hospitality Management.

These resources are available to millions of learners who are willing to improve their learning skills. (NIOS, OER, 2015)

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## Project OSCAR (<http://oscar.iitb.ac.in/aboutoscar.do#his>)

The main goal of the Project OSCAR (Open Source Courseware Animations Repository) is to build a large repository of web based, interactive animations and simulations called as Learning objects (LOs) for teaching and learning concepts in science and technology. The project OSCAR was conceptualized by Prof. Sridhar Iyer at IIT Bombay. Project OSCAR evolved out of the xNET project. The learning object is a digital resource that contains an objective, a learning activity and an assessment. All learning objects in Project OSCAR are developed under CC BY NC SA 2.5 India License.



## National Programme of Technology Enhanced Learning (<http://nptel.ac.in/about.php/>)

National Programme of Technology Enhanced Learning was executed by Indian Institute of Technology (IIT Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and Indian Institute of Science, Bangalore. NPTEL project was first conceived in 1999 to pave the way for introducing multimedia and web technology to enhance learning of basic science and engineering concepts. The aim of the project NPTEL is to revamp the engineering education in India to facilitate the competitiveness faced by Indian industry in global markets. NPTEL provides E-learning through online web and video courses in engineering, science and humanities stream. The mission of the NPTEL is to enhance the quality of engineering education in the country by providing free online courseware. As on June 2014 NPTEL provides 372 web courses and 398 video courses. Content of the courses are based on the model curriculum as proposed by AICTE (All India Council of Technical Education) and syllabi of the affiliating universities of India. All the courses are provided under Creative Commons license CC-BY-SA.



**e-PG Pathshala:** The e-PG Pathshala is the initiative of the Ministry of Human Resource and Development under the National Mission on Education through ICT. UGC has assigned work to develop the e-course content for 77 subjects at postgraduate level. The project is presently handled by Information and Library network (INFLIBNET), Gandhinagar. The e- contents include learning material, interactive video tutorial and self assessment questions. The e-contents are in open access mode. (INFLIBNET, 2015)

## Drivers and Barriers

### Drivers

OECD report highlights the OERs in terms of technology, economic and social and legal drivers as follows:

**Technological:** Advancement of user friendly information technology infrastructure and high broadband connectivity.

**Economic:** low cost production of open educational content and sharing reduces the cost.

**Legal:** New licensing schemes promote free sharing and reuse of the content.

**Social:** Increased willingness to share. (OECD, 2007, p. 11)

Kanwar, Kodhandaraman and Umar (2010) highlighted the following advantages of the OERs:

1. OER foster the exchange of global knowledge.
2. OER help forge south-north and south-south linkages.
3. OER help developing countries save both course authoring time and money.
4. Online collaborative OER development supports capacity building in the developing world thereby bridging digital divide.

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5. Collaborative OER development encourages the preservation and dissemination of indigenous knowledge.
  6. The availability of high quality OER can raise the quality of education at all levels.

### **Barriers**

Open Educational Quality Initiative developed a report which highlights five main barriers faced by individuals while using OERs. These are: lack of institutional support; lack of technological tools for sharing and adapting resources; lack of skills and time; quality or suitability of OERs; lack of trust. (Murphy, 2013). One main challenge faced by OERs is that of long-term sustainability. (Antoni, 2009).

The OECD report highlights the following barriers to OERs development:

**Technology Barrier:** Many developing countries are suffering from broadband connectivity.

**Economic Barrier:** Lack of resources for purchase of hardware and software would be a major hindrance for the development of OER. Sustainability of the OER project is a problem due to financial constraints.

**Legal Barrier:** To bring any educational resource in OER domain requires permission from an original creator of the work. Legal barriers prohibit the copyright violations.

**Lack of Awareness and lack of Sharing:** Lack of skills to use the technology, thus unable to share the resources with others. Lack of academic recognition of the development by teaching staff furthers a major concern of lagging behind of OERs development in developing nations. (OECD, 2007, p.11)

### **Conclusion**

OER projects sustain only when there is economic, political and legal infrastructure provided by government, institutions or corporate houses. OER is a very good concept for developing nations to take advantage from it. Teaching faculty should enthusiastically participate in this initiative to develop OERs and rate the efficiency of already developed resources. Open educational resources fulfill the motto of “Education for All”. In the words of Wiley, Cable and Soares (2012) “Open Educational resources represent multiple opportunities to innovate in the teaching and learning context, including the ability to dramatically improve the affordability of education and enable better personalization of institution.”

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# Comparative Simulation of Wear for Excavator Bucket Tooth Using Different Materials

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## **ABSTRACT**

*The Excavator is used for material handling at mining and construction sites. The bucket tooth of the excavator have to bear heavy dynamic loads of materials like soil, rock, etc. The bucket teeth are subjected to abrasive wear due to the abrasive nature of soil particles. This phenomenon reduces the life of the excavator bucket tooth to 72 - 120 working hours. This project work deals with analysis of wear on the basis of volume loss using ANSYS, for the excavator bucket. The purpose of work is to improve the service life of bucket tooth by decreasing the wear.*

*Moreover it requires the resistive forces offered by the ground on the bucket. The excavation force required to cut the soil by the excavator bucket tooth has been analyzed in this work to improve the design of the bucket teeth.*

*The existing excavator bucket tooth assembly was analyzed for the operational loading conditions for its failure during working.*

## **INTRODUCTION:**

Mining is the extraction of valuable minerals or other geological materials from the earth from an ore body, lode, vein, seam, reef or placer deposits which forms the mineralized package of economic interest to the miner. The Mining industry in India is a major economic activity which contributes significantly to the economy of India. The GDP contribution of the mining industry varies from 2.2% to 2.5% only but going by the GDP of the total industrial sector it contributes around 10% to 11%. Even mining done on small scale contributes 6% to the entire cost of mineral production. Indian mining industry provides job opportunities to around 700,000 individuals (1).

Ministry of Mines is responsible for survey, exploration and mining of all minerals, other than natural gas, petroleum, atomic minerals and Coal. Ores extracted during mining include metals, coal, oil shale, gemstones, limestone, dimension stone, rock salt, potash, gravel, and clay. Mining is required to obtain any material that cannot be grown through agricultural processes, or created artificially in a laboratory



or factory. Mining in a wider sense includes extraction of any non-renewable resource such as petroleum, natural gas, or even water. Wear related failure in industry can be summarized as (2)-:

Type of wear	Abrasive wear	Adhesive wear	Erosive wear	Fretting wear	Corrosive wear	Other
failure	50%	15%	8%	8%	5%	14%

## THEORERICAL ANALYSIS

### Calculations

Material Properties of Tooth (3):

AISI 1045 AISI 1035

Modulus of elasticity = 205 GPa

Poisson's Ratio = 0.29

Ultimate Tensile Strength = 670 MPa

Yield Tensile Strength = 435 MPa

Hardness = 210 BHN

Material properties of tooth:

Modulus of elasticity = 190-210 GPa

Poisson's Ratio = 0.27-0.29

Ultimate Tensile Strength = 585 MPa

Yield Tensile Strength = 370 MPa

Hardness = 183 BHN

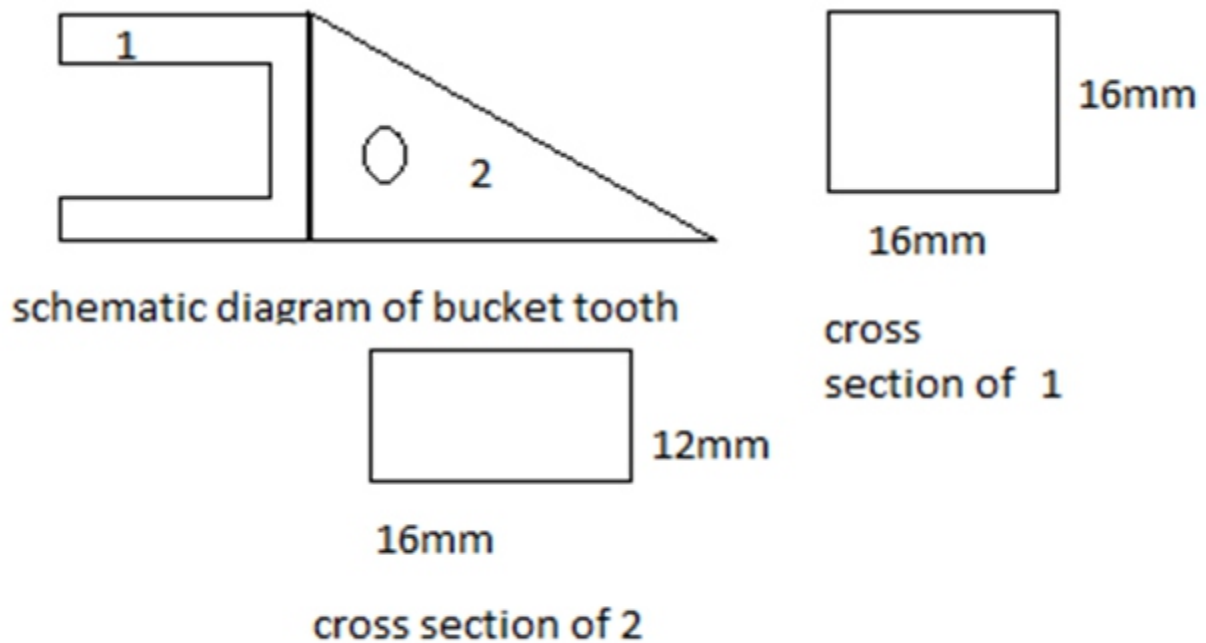


Fig 1 Tooth geometry

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### Theoretical Stress Analysis for the tooth

$$h = 18\text{mm}, y = 52/2 = 26 \text{ mm},$$

$$M = \text{Force} \times \text{Eccentricity}$$

$$= 31900 \times 200 = 6380000 \text{ N.mm}$$

$$I_{xx1} = \frac{bd^3}{12} + Ah^2 \quad \text{Here } b = 16 \text{ mm}, h = 12 \text{ mm}$$

$$I_{xx1} = 2 * (16 * \frac{12^3}{12} + 16 * 12 * 20^2)$$

$$I_{xx2} = 2 * (16 * \frac{16^3}{12} + 16 * 16 * 20^2)$$

$$I_{xx2} = 215.72 * 10^3 \text{ mm}^4$$

$$\text{Now } I_{xx} = I_{xx1} + I_{xx2}$$

$$I_{xx} = 374 * 10^3 \text{ mm}^4$$

By bending equation

$$\frac{M}{I_{xx}} = \frac{\sigma}{y}$$

$$\frac{6380000}{374 * 10^3} = \frac{\sigma}{30} = \sigma = 511.76 \text{ MPa}$$

$$F = 31900 \text{ N}$$

$$A = 708 \text{ mm}^2$$

$$\text{Then shear stress} = \frac{\text{force}}{\text{area}}$$

$$\tau = \frac{31900}{708} = \tau = 45.05 \text{ MPa}$$

**Wear analysis** the analytical wear analysis is carried out for two materials used for fabricating excavator bucket tooth based on Archard's Modified equation for abrasive wear. The amount of volume loss is then compared with the simulation using ANSYS based on creep strain (4).

### On the basis of contact stress

Contact stress is taken half of the ultimate tensile strength

### Material I AISI 1045

Contact stress =  $0.5 * 670 = 335 \text{MPa}$

$$\text{ewr} = \frac{10^{-4}}{0.473} * 335 * 1 * 1 = \text{ewr} = 70.83 * 10^{-3}$$

### Material II AISI 1035

Contact stress =  $0.5 * 585 = 292.5 \text{MPa}$

Then Wear strain

$$\text{ewr} = \frac{10^{-4}}{0.473} * 292.5 * 1 * 1 = \text{ewr} = 61.83 * 10^{-3}$$

Where S induced stress, R repetition of load, C2&C3 are constant

### Simulation

Statistics	
Nodes	42353
Elements	24256
Mesh Metric	None
Suppressed	No
Refinement	1

It is the imitation of the operation of a real-world process or system over time. The act of simulating something first requires that a model be developed; this model represents the key characteristics or behaviors/functions of the selected physical or abstract system or process (5).

In this work, I have simulated failure based on bending stress and wear of the standard teeth of excavator bucket using ANSYS. ANSYS provides a wide range of affordable technologies and services to help meet the diverse and evolving needs for design. The report generated by ANSYS on working excavator bucket are as follows:

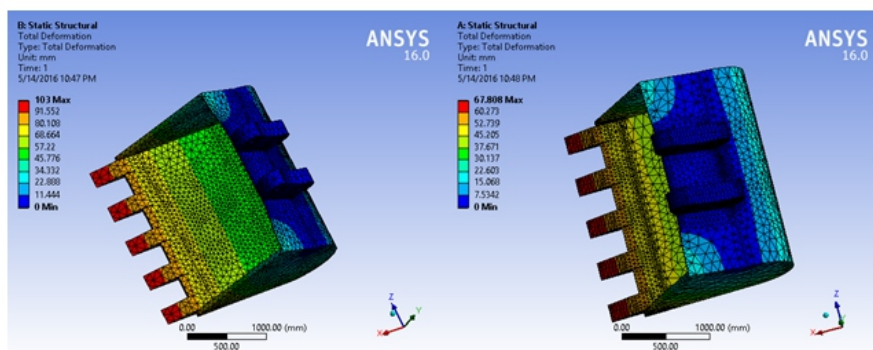


Fig 2 total deformation

Fig 2 represents the bending stress acting on excavator bucket tooth under 31900N force. it is clear that maximum bending stress is acting in between the joint and bucket. Red portion represents the maximum bending stress which is equal to 560MPa for AISI1045 and 673.56MPa for AISI1035.

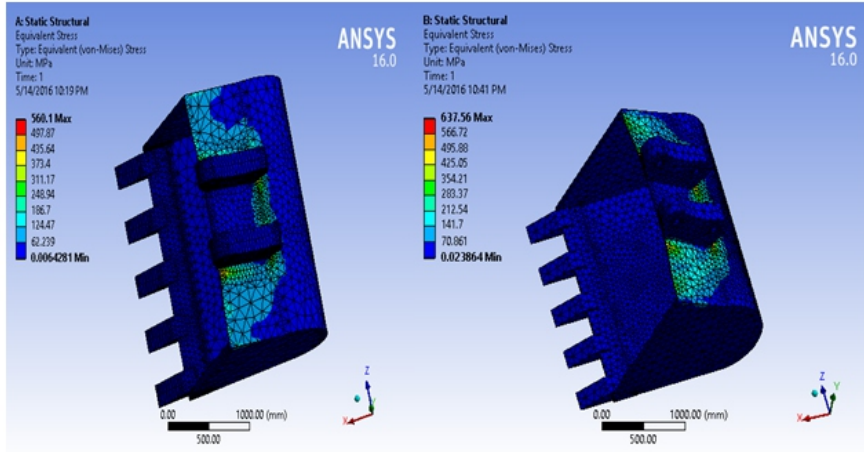


Fig 3 Equivalent Stress

Sno.	Material	Analysis	Analytical Result	Anslys Result	% of Error
1	AISI1035	Bending stress	511.76MPa	497.87MPa	2.72
2	AISI1045	Bending stress	511.76MPa	495.88MPa	3.10

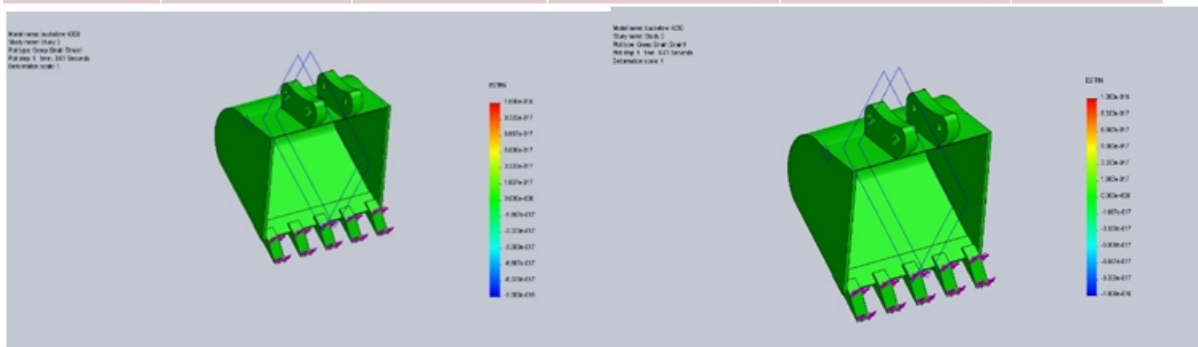


Fig 4 creep strain

Simulation of wear based on creep strain for AISI 1035 & AISI1045

Fig 4 represents the creep strain for AISI1035 and AISI1045. it is clear that the value of creep strain is less than  $1.00e-16$  since the value of theoretical wear strain lies in the range of simulated wear strain, hence our analysis is correct.

S no.	Material	Analysis	Analytical Result	Ansys Result	% of Error
1	AISI 1045	Wear strain	$70.82 \times 10^{-3}$	$74.01 \times 10^{-3}$	4.50
2	AISI 1035	Wear strain	$61.83 \times 10^{-3}$	$64.01 \times 10^{-3}$	3.91

## CONCLUSION

1. It is observed that the region near the bush and teeth are having high value of stress and hence they are more prone to failure.
2. Material will be separated if applied stress exceeds ultimate tensile stress.
3. Total deformation for AISI 1035 and AISI 1045 are 103 mm & 63.08 mm respectively. it is clear that material AISI 1045 is stronger than material AISI 1035.
4. In field trial it was observed that teeth number 2, 3 & 4 wear at faster rate than teeth 1 and 5 which is consistent with more material flowing over and around the outside teeth.
5. It is clear that percentage error of bending stress for AISI 1045 is approx. 3.10 % and for AISI 1035, it is 2.72 % which is less than 5 % hence our analysis is correct.
6. It is clear that percentage error of wear for AISI 1045 is approx. 4.50 % and for AISI 1035, it is 3.91 % which is less than 5 % hence our analysis is correct.
7. The position of middle tooth must be changed periodically so that uniform wear occur on each tooth.
8. The viability of the use the creep strain to model the wear coefficient for abraded materials was demonstrated. Previous models were developed taking into account only the Young's modulus of worn surface, discarding the properties of abrasive material. These cases work only for pairs where the abrasive particle is harder than the abraded material and it was demonstrated that they fail when the abrasive hardness is relatively low.

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# Role of Teaching Pedagogies for Insightful Learning: A Learner Centered Perspective

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## **ABSTRACT**

*Many people believe that learning depends mainly on the teachers. Teachers make all the decisions concerning the curriculum, teaching methods, and the different forms of assessment. Traditional teacher-centered methods like lecture and dictation method neglect the interests, abilities and critical thinking skills of students, but in contrast learner centered methods incorporate several learning styles, cooperative activities, and even technology in order to engage the students and promote their talents, interests and abilities. The learner centered education always keep this concept in mind that more a person is engaged with concept, more he/she able to learn it better by adding his/her own meaning and associations to it. This paper argues that now it is the need of the hour to think differently about assessing the role of educational techniques in the teaching and learning process. The first section deals with the question, "what is education, its purpose and what is insightful learning?" the second section deals with the objectives and methodology of paper; In third section paper discuss the principles of LCE, advantages and disadvantages of learner centered education and fourthly this paper discussed the importance of LCE for insightful learning and how to apply learner centered techniques appropriately in teaching-learning process to promote critical thinking and problem solving skills.*

**Keywords: - Education, Learner centered Education, Insightful learning.**

## **INTRODUCTION:**

Education is highly important in today's society. Education is a formal process of learning in which some people consciously teach while others adopt the social role of learner. Education plays a major role in everyone's life. Without education a person will not get far in life. Education prepares a person to adapt new concepts, ideas, skills and values that will be very essential for one's life (Jennifer, 2012).

Education should be a mean to empower children and adults alike to become active participants in the transformation of their societies. The role of education should be to provide skills and techniques to learner for insightful learning. Insightful learning will prepare them physically, mentally and socially for the world of work in later life (Szarowicz, 2004).

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Insightful learning is a kind of learning involving a period of mental manipulation of information associated with a problem, prior to the realization of a solution to the problem (Ash, Jee & Wiley, 2012).

The nature of the situation is very important for insightful learning. The learner must be able to perceive the relationships among all relevant parts of the problem before insight can occur. Insight follows a period of trial and error behavior. In the trial-and-error period, the learner does not, however/exhibit blind and random attacks. The insightful solution comes all on a sudden (Saurab, 2012).

### **OBJECTIVES OF THE STUDY-**

As Fullan in 2000 argued that the purpose or objectives of education is to build learning communities. Communities that bring moral ethics, values and objectives back into teaching and learning process and also reconnect teachers with their fundamental objectives as making a difference in young people's lives and changing the quality of relationships throughout the system. Fullan also pointed out that the main objective of education should be that of helping learners communicate well and confidently with others, find relevant and accurate information for the task at hand, and be co-learners with teachers in diverse settings that go beyond walls of educational institution (school and colleges). For this purpose it should be learner centered (Mccombs, 2000).

Therefore, the present study has been undertaken with following objectives:-

1. To study the importance of learner centered education in teaching learning process.
2. To discuss the psychological principles, advantages and disadvantages of learner centered education.
3. To find out the significance of learner centered education system for insightful learning.
4. To study different approaches to implement learners centered education for insightful learning.

### **METHODOLOGY-**

The present study is based on Secondary data which have been obtained from extensive search of articles, research papers, books and published and unpublished reports by using the internet and academic database. It provides the knowledge of collecting ,analyzing and interpreting data.

### **Concept of Learner Centered Education:-**

Traditional methods of teaching are long-established methods of imparting knowledge that is mainly teacher-centered. The teacher is in full control of the learning process, and he/she plays the role of an

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instructor. Traditional lecture mode may be effective for transmitting a large body of content, however, these one-way exchanges often promote passive, superficial learning. This method tends to focus more on the lower levels of the cognitive domain. Thus to attain the objectives of education an alternative of traditional method, student centered method can be used (Walters, 2015).

The concept of student-centered or learner centered learning has been credited as early as 1905 to Hayward and in 1956 to Dewey's work. The term student-centered learning was also associated with the work of Piaget and more recently with Malcolm Knowles.

The term learner centered or student centered learning is widely used in the teaching and learning literature. Many terms have been linked with student-centered learning, such as flexible learning, experiential learning, and self-directed learning and therefore the slightly overused term 'Student or learner centered learning' can mean different things to different people (O'Neill & McMahon, 2005).

Learner centered or student centered education is a perspective that couples a focus on individual learners' heredity, experiences and perspectives about concepts, backgrounds, talents, interests, capacities, and needs.

Learner-centered education (LCE) is a reflection of practice that support learning for all. Learner-centered education was advanced by the Progressive Education Association, which was formed in 1919. The Progressive Movement flourished until the United States entered World War II, in 1941(Dean, 2003).

While reviewing and analyzing the conceptual framework of LCE given by Progressive Education Association, Weimer (2002) an educationist and a psychologist outlined the key properties of learner centered education to redefine the concept of LCE. He suggests that because as it makes less demands upon them, until the evening before an exam, whereas learner-centered pedagogy requires a more active role in the classroom experience. For faculty, it can mean a shift of some level of responsibility to students, which may feel like a loss of control and these properties of LCE based on the idea that:-

- It should be assume that the learners are capable to learner and they can blossom as a power.
- Use content not as a collection of isolated facts, but as a way for students to critically think about the relevant questions in their fields.
- Change the role of the teacher from the sole authorization to as a fellow traveller in search of knowledge.



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- Give some responsibility to the learner so that they can find their weakness and strengths in learning.
  - Utilize assessment measures not just to assign grades but as a most effective tool to promote learning (Wohlfarth, Sheras, Bennett, & Simon, 2008).

Many researches had been conducted on learner centered education to see its effect on insightful learning. Lea et al. (2003), summarized some doctrines of learner centered education such as 'the reliance on active rather than passive learning, an emphasis on deep learning and understanding, increased responsibility and accountability on the part of the student, mutual respect within the learner teacher relationship, and a reflexive approach to the teaching and learning process on the part of both teacher and learner.

### **The Psychological Principles of Learner-Centered Education:-**

In the beginning of 1990, the American Psychological Association (APA) appointed a special Task Force on Psychology in Education, whose one purposes was to integrate research and theorization from psychology and education in order to surface general principles to provide a framework for schools and other educational institutions to redesign and reform their curriculum and educational ideas. The result was a document that originally specified twelve fundamental principles about learners and learning that, taken together, provide an integrated perspective on factors influencing learning for all learners. These 12 learner-centered principles are categorized into four domains:

- metacognitive and cognitive factors,
- affective and motivational factors,
- developmental and social factors,
- Individual difference factors.

These four categories group the principles of learner centered education into validated domains important for learning process and these principles are:-

- Nature of the learning process:- There are different types of learning processes. The learning of complex and difficult subject matter is most effective when it is an intentional process of concept making and then it leads to constructing meaning from information and experience.
- Goals of the learning process: The successful learner, over time and with support and instructional guidance, can create meaningful, coherent representations of knowledge.

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- Construction of knowledge: Knowledge widens and deepens as students continue to build links between new information and experiences and their existing knowledge base. The successful learner can link new information with existing knowledge in meaningful ways.
  - Strategic thinking: a good motivated and successful learner can make use of his/her critical thinking a repertoire of thinking and reasoning strategies to achieve complex learning goals.
  - Thinking about thinking: LCE is based on the idea that very learner must use his abilities of metacognition. A successful learner can reflect on how they think and learn, set reasonable learning or performance goals, select potentially appropriate learning strategies or methods, and monitor their progress toward these goals. Higher order strategies for selecting and monitoring mental operations facilitate creative and critical thinking.
  - Motivational and emotional influences on learning: Motivation plays an important role in learner centered education. What and how much is learned is influenced by the motivation. Motivation to learn something is influenced by the individual's emotional states, beliefs, interests and goals, and habits of thinking.
  - Intrinsic motivations to learn: Curiosity, flexible and insightful thinking, and creativity are major indicators of the learners' intrinsic motivation to learn. The learner's creativity, higher order thinking, and natural curiosity all contribute to motivation to learn. Intrinsic motivation is stimulated by tasks of optimal novelty and difficulty, relevant to personal interests, and providing for personal choice and control.
  - Developmental influences on learning: As individuals grow and develop with time and experience, there are different opportunities and constraints for learning. Learning is most effective when differential development within and across physical, intellectual, emotional, and social domains is taken into account.
  - Social influences on learning: LCE believed that Learning is influenced by social interactions, interpersonal relations, and communication with others.
  - Individual differences in learning: Individuals are born with and develop their own capabilities and talents. They have different strategies, approaches, and capabilities for learning that are a function of prior experience and heredity.
  - Learning and diversity: these principle deals with the idea that learning is most effective when differences in learners' linguistic, cultural, and social backgrounds are taken into account
  - Standards and assessment techniques: Setting appropriately high and challenging standards and assessing the learner as well as learning progress, including diagnostic, process, and outcome assessment -- are integral parts of the learning process (American Psychological Association, 1997).

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## **Advantages and disadvantages of Learner Centered Education:-**

Learner-Centered Education have advantages and disadvantages as following:-

- **Advantages of Learner centered Education:-**

Advantages of this method includes that more focus on students own interest, capacities, abilities and other skills like discovery approach and research aptitude and attitude to learning and students acting more independently in their learning strategies, instead of depending on an instructor or teacher to deliver more material. This method also gives an outlook of student's weakness and strengths to teacher.

Rallis (1995) in his study argued that teachers in student-centered education system, learn who their students are; they came to know what talents and life experiences their students brings and what each student needs. Moreover, if a student's does not meet standard of academic achievements, the student is not dismissed as a failure; rather the teacher considers what can be done to enable the student to learn (Guthrie, 2004). With these advantages LCE has some disadvantages also.

- **Disadvantages of Learner centered Education:-**

Disadvantages treats Learner centered education as an approach to learning with not as much structure or discipline as a traditional method which causing students to feel over whelmed and maybe not pull as much from learning as they normally would. Also, another disadvantage to learner-centered instruction would be too much independence for students but on certain times with new material, students may need a teacher as a key driving force in order to pull everything possible from the lesson, instead of being left alone to discover it out for themselves (Murphy, 2006).

With some disadvantages, concept of LCE has the power to promote a learning which is more deep and insightful for learners.

## **Importance of Learner Centered Education for Insightful Learning:-**

Learner centered education can play a very vital and effective role in deep and insightful learning. Learner centered education provides many key points for insightful learning. These points are as following:-

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- Learner centered learning shifts the balance of classroom power from teacher to student thus fostering active learning and engagement among peers. Learner centered learning enables critical thinking and is a means to develop knowledge rather than a collection of facts by building upon and challenging prior learning.
  - Learner centered learning returns or laid some responsibilities for learning to the students, so students are able to discover their strengths and weaknesses and take part in directing their own knowledge gain. Learner centered learning employs effective assessment to promote learning and inform future practice (Weimer, 2002).
  - The learner centered education prepare the students to become autonomous and life-long learners who assume personal responsibility for their own learning by helping them to engage avidly in intentional, active, goal-directed, and self regulated learning, promote meaningful learning and understanding of new materials by helping their students activate their prior knowledge base and actively link, connect, or relate new knowledge to this knowledge.
  - Learner-centered education motivates the students to learn. Since motivation enhance student learning, teachers should promote what promote students' motivation (such as curiosity, feeling good about oneself, self-esteem, and self-confidence) and emotional security, and eliminate what destroy their motivation such as negative emotions (intense anxiety, worries, feeling of incompetence, fear of failure).
  - In learner-centered education teachers know how to design learning materials appropriate to the level of cognitive, physical, emotional, and social development of their students (Phunghol, 2005).

Faculty members from across the nation (who teach both large and small classes) who have adopted a student-centered learning approach find that teaching is more enjoyable. Conventional wisdom has been that if faculty teach well and offer insightful, clear, rigorous, challenging, and even enjoyable lectures, our students will learn. Learner-centered pedagogy questions this assumption, given differences in how students learn. The emergence of learner-centered instruction arises from the quest to have all students achieve more success in their educational enterprise.

### **Approaches to implement Learner Centered Education:-**

Teachers may use different approaches of practice to execute and implement the teaching and learning approaches related to student-centered learning. These approaches include problem based learning, inquiry-based learning and challenge-based learning. Each of these methods applies the shared foundation of student-centered learning theory with slight variations of emphasis.

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- Problem based learning:-

Problem-based learning (PBL) is an instructional approach that has been used successfully for over 30 years and continues to gain acceptance in multiple disciplines. It is an instructional (and curricular) learner-centered approach that empowers learners to conduct research, integrate theory and practice, and apply knowledge and skills to develop a viable solution to a defined problem (Savery, 2006).

Hmelo-Silver et al. (2007) argued that problem-based learning shifts the teacher's role from dispensing information to guiding the construction of knowledge by his or her students around an initially unclear problem. Students refine the problem, develop their questions, and investigate the topic using a wide variety of primary and secondary sources, material and work out a variety of possible solutions before identifying the most reasonable ones.

- Inquiry-based learning:-

Inquiry-based learning is grounded in the philosophy of John Dewey, who believed that education begins with the curiosity of the learner. Inquiry-based learning is a student-centered, active learning approach focused on questioning, critical thinking, and problem solving. Inquiry-based learning activities begin with a question followed by investigating solutions, creating new knowledge as information is gathered and understood, discussing discoveries and experiences, and reflecting on new-found knowledge (Savery, 2006).

Inquiry-based learning has its origins in the practices of scientific inquiry and places a heavy emphasis on posing questions, gathering information and analyzing data, and constructing evidence-based arguments and suggestions (Hmelo-Silver et al., 2007).

- Challenge-based learning:-

Challenge-based learning is a collaborative learning experience in which teachers and students work together to learn about compelling issues, propose solutions to real problems, and take action. The approach asks students to reflect on their learning and the impact of their actions, and publish their solutions to a worldwide audience (Johnson et al., 2009).

These approaches can be very useful for teacher and learner. These approaches allow learners to engage in constructive solution-seeking activities and also promotes, higher order thinking skills, critical thinking skills and self regulated learning habits. These approaches provide students with opportunities to develop and refine these skills will take the efforts of many individuals

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## CONCLUSION:

Education's role is to challenge inequality and contradiction in lives of peoples. Education acts as integrative force in society by communicating value, that unites different sections of society. For this purpose learner centered education system can play a vital role. The ultimate goal of student-centered education is for students to gain independent minds and the capacity to make decisions about their life-long learning. Learner-centered education places the focus on each student's individual needs. The Learner-Centered education (LCE) focuses on both teacher's and learner's experiences. It helps to motivate teaching, learning and its achievement. Teachers from across the nation (who teach both large and small classes) who have adopted a student-centered learning approach find that teaching is more enjoyable. Use of approaches like problem based learning, inquiry-based learning and challenge-based learning by teachers to promote solution-seeking activities which ultimately leads to insightful learning.

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# Satisfaction Level of UG/PG Students and Research Scholars Using Collection and Services of the Central Library, Guru Ghasidas University, (C.G.): A Study

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## **ABSTRACT**

*The purpose of this study was to investigate the factors affect the satisfaction level of the user using various collection and services of the central library at Guru Ghasidas University, Bilaspur, Chattisgarh. The study mainly focused on the preferred type of collection and services of library. The study describes in brief about important study oriented collection and need full service providing by central library. The objectives, scope, research methodology of the study are clearly expanded. For this purpose the researchers prepared a well structured questionnaire as a tool for data collection and same responses were subjected to mathematical and statistical analysis.*

**Keywords:** *Information Satisfaction, Library Use, Use of Library- Research Scholars Central Library, Guru Ghasidas University*

## **Introduction :**

The present era is known as information and knowledge revolution. Libraries have a big collection of different types of electronic resources. Today one the most defining characteristics of a library is the resources and services that compose the library collection. Even the most casual observer may gain some insight into the mission of the library by looking at the resources selected for inclusion. Beyond supporting the mission of the library, the collection determines the level of access of patrons. The selection of the resources is one of the most responsibilities of the librarians. It impacts the level of access to information for the patrons. In the ICT enable scenario incensement in the amount, type, and format of information available on the Web has affected user's need. Information is the product of human in action it may be abstractor concrete when an individual being to think about the variety if image and sensations flash across his/her memory retains some piece of knowledge.



That piece of knowledge is the information. Information is an important input or basic resources link between variety of activities intellectual and material in the practice of any subject. Research stimulated often by new information is sustained by containing flow of information and when yield new information. Use of information, as well as satisfaction or dissatisfaction Mohd Sharif MohdSaad and A. N. Zainab [2009] have identified an investigation of information seeking behaviour of computer science and information technology undergraduates: a quantitative approach. They tried to tell that library is the most used channel among research scholars. Reference service and abstracting & indexing services are the most favourable information services in the library.

### Guru Ghasidas University: An Overview

Guru Ghasidas Vishwavidyalaya, is a Central University of India, located in Bilaspur C.G. State, established under Central Universities Act 2009, No. 25 of 2009. Formerly called Guru Ghasidas University (GGU), established by an Act of the State Legislative Assembly, was formally inaugurated on June 16, 1983. GGU is an active member of the Association of Indian Universities and Association of Commonwealth Universities. The National Assessment & Accreditation Council (NAAC) has accredited the University as B. Situated in a socially and economically challenged area, the university is appropriately named to honor the great Satnami Saint Guru Ghasidas (born in 17th century), who championed the cause of the downtrodden and waged a relentless struggle against all forms of social evils and injustice prevailing in the society. The University is a residential cum affiliating institution, having its jurisdiction spread over Bilaspur Revenue Division of the state of Chhattisgarh.

### Central Library, GGU, Bilaspur

Central library was established on 26th Oct. 1984 as a part of the University to support its academic activities. The present Library stock comprises more than 105000 books, 3950 back volumes of journals and 1100 Ph.D. theses. Presently, it subscribes about 118 Indian and 34 foreign printed journals of various disciplines. The library has free Internet and Wi-Fi facilities for its users. More than 400 students/research scholars/faculty members are accessing Wi-Fi services in the campus. Library automation work in SOUL 2.0 package has been completed. Library provides E-journals consortium service of UGC Info net through INFLIBNET, INDEST Consortium (IEL Online <http://www.ieee.org/ieeexplore>), Bibliographic Database (JCCC <http://www.jccc-ugcinfonet.in> and ISD <http://isid.org.in>) and Vishwavidyalaya Full Text E-Resources along with current awareness and SDI service for the users. The e-resources URLs links are available on the University website in the link of Central Library for online searching.

## Objectives

The study focuses on satisfaction level of the researchers regarding various collection and services of the Central Library, Guru Ghasidas University, Bilaspur.

Some Specific objectives are:

- ™ To examine the satisfaction level of the researchers in context of collection and services of Central Library at Guru Ghasidas University, Bilaspur, Chhattisgarh
- ™ To evaluate the feedback of research scholar during the use of the library resources and services.
- ™ To find out the frequency for the use of the library with the resources and services.;
- ™ To determine the type of collection and services used by researchers;
- ™ To study the purpose for the use of collection and services of the library;
- ™ To identify the important collection and services to access the usefulness of collection and services provided by the central library;

## Materials and Methods

The UG/PG Students and research scholars as respondents of the Guru Ghasidas University, Bilaspur, Chhattisgarh are taken to conduct this study. A structured questionnaire was prepared and personally distributed as a method of data collection among them. Approx 292 questionnaires were randomly distributed among the research scholars.

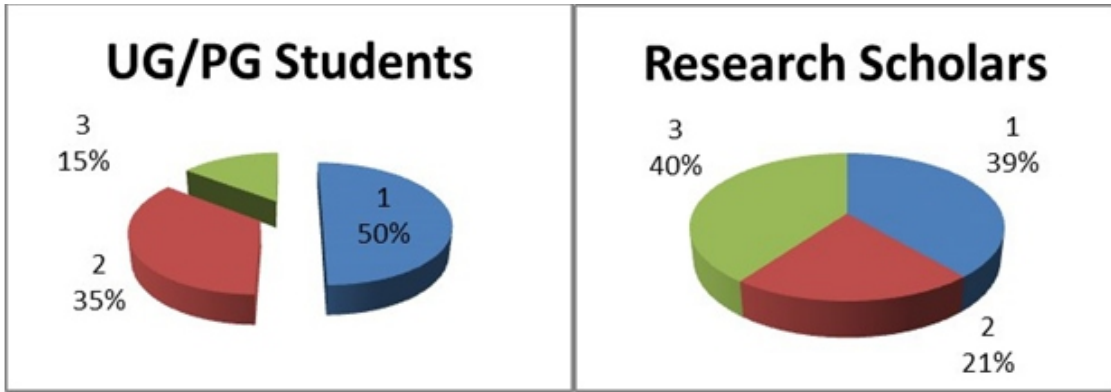
## Data Analysis and Interpretation

Among the sample population of 231 faculty and research scholars, 196 were responded to the questionnaire. The total response constitutes 91.16 % of total sample population and the break-up of number of respondents from each category is provided in Table 1. The data for the open-ended questions were analyzed statistically and the results are presented in the following sections.

Questionnaire distribution and respondent according to status

Table 1.: Sample and Rate of Response

Types of Users	Distributed	Received	Percentage (%)
UG/PG Students	239	168	70.29
Research Scholars	53	29	54.72
Total	292	197	67.47



Among the sample population of 168 UG/PG Students and 29 research scholars were responded to the questionnaire. The total response constitutes 67.46 % of total sample population and the break-up of number of respondents from each category is provided in Table 1. The data for the open-ended questions were analyzed statistically and the results are presented in the following sections

Table 2: Frequency of Visit of the Library

Frequency of Visit of Central Library	UG/PG Students	%	Research Scholars	%
Every Day	98	58.33	21	72.41
One or Two times in a week	43	25.6	5	17.24
One or Two times in a month	19	11.31	3	10.34
Occasionally	8	4.76	0	0.00
<b>Total</b>	<b>168</b>		<b>29</b>	

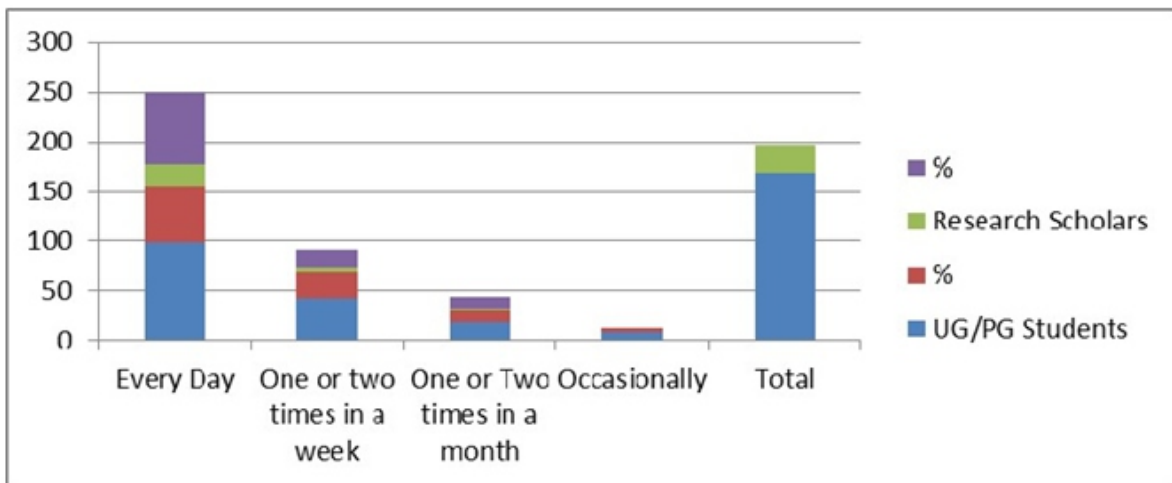


Figure 1 :Frequency of Visit of the Central Library by the respondents

The frequency of visit of central library are analyzed and arrived at the results as presented in Table 2. On the bases of analyzed table show that, maximum respondents i.e. 98 (58.33%) visit the central library every day amongst UG/PG Students, followed by (25.60%) one or two times in a week and (11.31%) one or two times in a month. Maximum research scholars i.e. (72.41%) visit the central library Every day followed by (17.24%) one or two times in a week and (10.34%) one or two times in a month visit the central library.

Table 3: Purposes of use of Library Collection and Services

<b>Purpose of use of Library</b>	<b>UG/PG Students</b>	<b>%</b>	<b>Research Scholars</b>	<b>%</b>
Study	73	43.45	4	13.79
Research Work	34	20.24	14	48.28
Writing Article	29	17.26	3	10.34
Dissertation/Proj	19	11.31	5	17.24
Other Purpose	13	7.74	3	10.34
<b>Total</b>	<b>168</b>		<b>29</b>	

The respondents were asked to information the purpose of use of Library Collection and Services. Their responses are analyzed and the results are summarized in Table 3 and Figure 2, which depicts that both the category of respondents uses Library Collection and Services maximum for their study and research works.

The Table 3 and Figure 2 express that majority of the UG/PG students i.e. 73 (73.45%) reports that their main purposes of use of Library Collection and Services is study, followed by research work 34 (20.24%), writing article 29 (17.26%), Dissertation/project work 19 (11.31%) and 13 (07.47%) for other purpose. Amongst the research scholars most of them i.e. 14 (48.28%) given preferences to research work, followed by other responses such as 5 (17.24%) for dissertation /project work, 4 (13.79%) use the Library Collection and Services for study and 3 (10.34%) for other purposes.

Table 4: Types of Collection used by respondents

<b>Types of Collection</b>	<b>UG/PG Students</b>	<b>%</b>	<b>Research Scholars</b>	<b>%</b>
Books	141	83.93	24	82.76
Journals	68	40.48	28	96.55
Theses	39	23.21	18	62.07
Online Database	49	29.17	19	65.52
CD-ROM	8	4.76	7	24.14

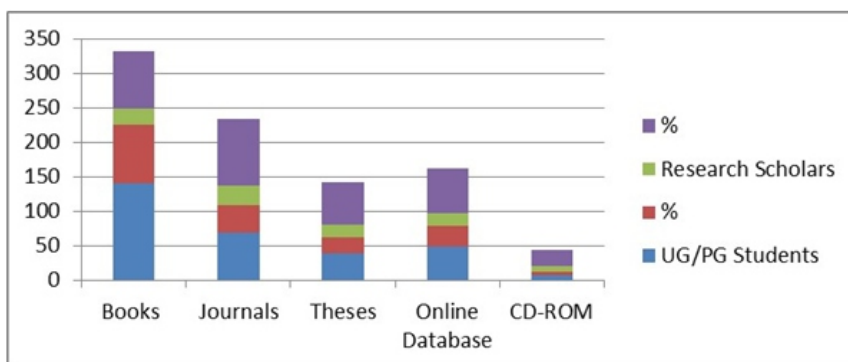


Figure 3: Types of Collection used by respondents

Table 4 reveals, that maximum UG/PG students i.e. 141 (83.93%) using the Books as a type of collection followed by Journals 68 (40.48%), Theses 39 (23.21%) and so on. Similarly most of the research scholars i.e. 28(96.55) using the Journals as a main type of collection followed by Books 24 (82.76%), Theses 18 (62.07%), Online Database 19 (65.52%) and CD-ROM 7 (24.14%) as type of collection.

Types of Services used by respondents: On the basis of analyzed data table 5 explores that UG/PG students i.e. 94 (55.95%) mostly using the Internet access services as a type of services followed by Online Database Services 46 (27.38%), Reference Services 23 (13.96%), Bibliographic Service 20 (11.96%) and so on.

Table 5:Types of Services used by respondents

Types of Services	UG/PG Students	%	Research Scholars	%
Internet Access Services	94	55.95	22	75.86
Online Database Services	46	27.38	19	65.52
Reference Services	23	13.69	16	55.17
Bibliographic Service	20	11.90	13	44.83
CAS	17	10.12	9	31.03
Inter Library Loan	3	1.79	2	6.90

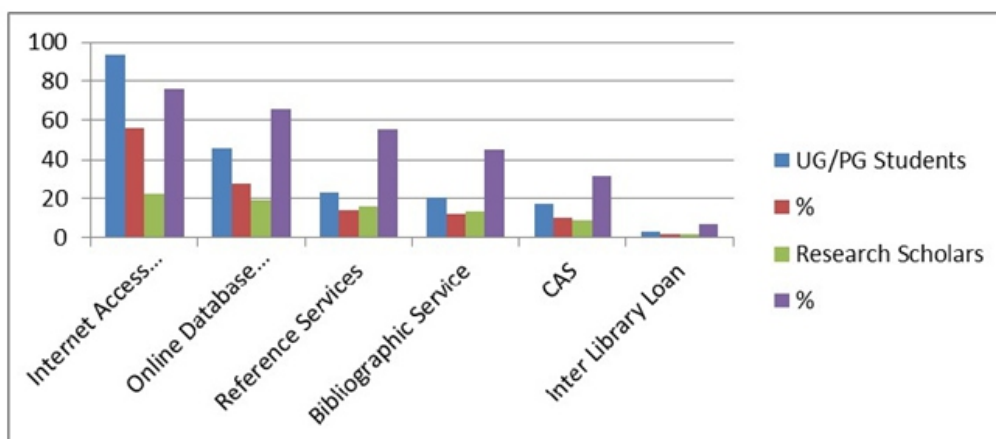


Figure 4: Types of Services used by respondents

Similarly most of the research scholars i.e. 22(75.86%) using the Internet access services as a type of services followed by Online Database Services 19 (65.52%), Reference Services 16 (55.17%), Bibliographic Service 13 (44.83%),CAS 9 (31.03%) and Inter Library Loan 2 (6.90%) as type of services.

Table 6: Level of User Satisfaction with Library Collection and Services

Level of User Satisfaction	UG/PG Students	%	Research Scholars	%
Fully Satisfied	69	41.07	14	48.28
Partially Satisfied	49	29.17	8	27.59
Least Satisfied	34	20.24	5	17.24
Not Satisfied	16	9.52	2	6.90
Total	168		29	

The aforesaid table 6 shows that majority of UG/PG students i.e. 41% are fully satisfied followed by Partial Satisfied 49 (29.17%), Least Satisfied 34 (20.24%) and only 16 (9.52%) of respondents are not satisfied. Similarly the majority of research scholars i.e. 14 (48.28%) are fully satisfied, followed by Partial Satisfied 8 (27.59%), Least Satisfied 5 (17.24%) and only 2 (6.90%) of respondents are not satisfied from the collection and services of the Central Library of Guru Ghasidas University, Bilaspur, Chhattisgarh.

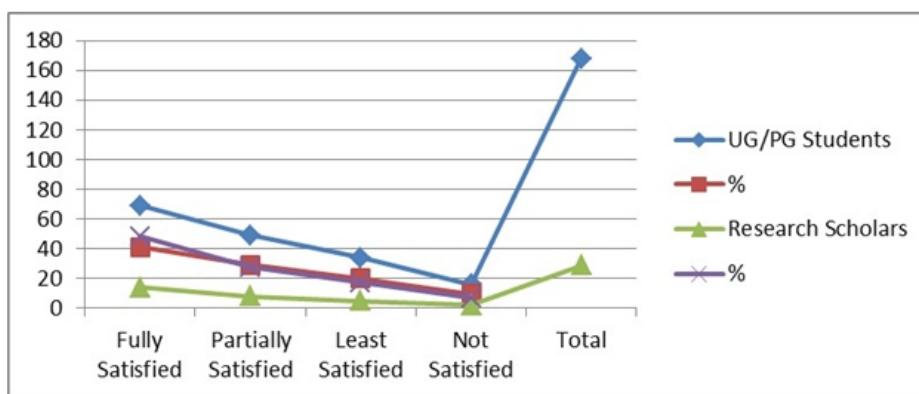


Figure 5: Overall satisfaction level of respondents

## Findings

The major findings of the study are:

™ It is observed that maximum respondents visit the central library every day, which is a healthy sign towards utilization of library.

™ The study reveals that 73% of UG/PG students use the central library mostly for the purpose of their study whereas 48% of research scholars use it primarily for their research work.

™ The study represents Books and Journals are most popular type of collection amongst 83% of UG/PG students and 96% of research scholars.

™ The study explores that Reference services is most popular type of service for 55% of UG/PG students and 75% of research scholars.

™ The study explores that majority of respondents 41% of UG/PG students and 48% of research scholars are fully satisfied from the collection and services of the Central Library of Guru Ghasidas University, Bilaspur, Chhattisgarh.

## Conclusion

The Guru Ghasidas University, Bilaspur, Chhattisgarh is the highly established institute which is well known for quality research and academic activities. The study sought to get the overview of satisfaction level of UG/PG students and research scholars by using the collection and services of the central library. The libraries are and will develop necessary tools to provide such services to their users satisfactorily. As a suggestion and keeping pace with changing user demands for some latest and ICT based collection and services in the central library of central library of Guru Ghasidas University should purchase maximum number of latest subject oriented collection and try to provide ICT based service facilities to UG/PG Students and researchers' satisfaction.

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# Status of LIS Education, Curriculum, Research and Training with Particular Reference to Andhra Pradesh: A Study

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## **ABSTRACT**

*This paper traces the emergence of Library and Information Science (LIS) education in India, before and after Independence. Elucidates the current status and levels of LIS education, as well as the research programme being offered by various Universities in Andhra Pradesh. Emphasizes the need to maintain uniformity and standards in LIS education, incorporates a field of professional education that provides training to future librarians to manage the Libraries and Information Centers efficiently. Also discusses the problems affecting the status of LIS education and suggests ways to solve these problems and to prepare the LIS professional to face the growing challenges of the job market with a special focus on the state of Andhra Pradesh. Paper brings out the need for including new techniques in LIS education to equip the future library managers. Also discusses the challenges faced by the LIS Professionals in changing scenario of Library and Information Centers in managing ever-increasing volume of knowledge and information The success of an education system depends to a great extent on the support services in general and libraries in particular. Libraries not only preserve the past records of knowledge but also meet the intellectual curiosity of the users and establish a link between the past, present and future. Today, libraries are functioning in a highly competitive, dynamic and technology based environment. This requires regular updating of Library and Information Science (LIS) curriculum to meet the challenges and emerging needs of LIS job environment.*

**Keywords:** LIS education, Curriculum, Status, Courses, Levels, Andhra Pradesh.

## **Introduction :**

Library and Information Science is the combination of Library Science and Information Science. Library and Information Science (LIS) provides education for library and information professionals. It aims at creating appropriate human resources to run the libraries and information centers such as Librarians, Information Officers, and Documentation Officer. Nowadays the library professionals are also designated as Web Manager, E – Publisher, Knowledge Manager, Internet Searcher etc. To survive in this dynamic world, LIS professionals must be well educated, highly qualified, and professionally competent with latest skills. LIS education is a perennial process, it continues in the form of continuing education to the professionals. India has witnessed a slow and steady growth of



Library and Information Science (LIS) education. The foundation of LIS education in India dates back to 1911 and completed 100 years in 2011. Library professionals need to study subjects such as Computer Science, Management, and Statistics etc. Hence, Library and Information Science is a multidisciplinary subject. The vision of LIS education includes teaching and research in the field of Librarianship. LIS education is also changing its curriculum to meet the needs of electronic era.

## **Objectives**

The basic objectives of LIS education are considered as:

™ To impart the students in understanding the basic principles and fundamental laws of Library Science.

™ To familiarize the students with the history and philosophy of the profession of librarianship and make them aware of the dignity of the profession.

™ To enable them to understand the functions and purpose of library in changing social and academic environment.

™ To equip them with latest techniques of librarianship and management.

™ To bring awareness among the students in processing, organizing and retrieval of knowledge/information in the library.

™ To give adequate knowledge of information technology (including hardware), communication technologies networks and networking, operating system Internet concepts, database management systems to the library professionals in managing electronic/digital/virtual libraries.

## **LIS Education during Pre Independence Era**

LIS Education in Pre Independent era dates back to 1911. The credit of starting a formal course in LIS education in India goes to William A Lanson Borden. He started course in at Central Library Baroda (Maharashtra) in 1911 under the royal beneficitation of Shivaji Rao Gaikwad II. Asa Don Dickson, another disciple of Dewey was the founding father of LIS education at university level. He started a library school at Punjab University, Lahore (now in Pakistan) to impart certificate course in LIS in 1915. After the library school of Cloumbia University “The training school at Punjab University was considered to be the second known library school in the world”.<sup>3</sup> Dickson was probably the first to use the term 'Library Science' for his training course in place of Librarianship” (Konnur, 1986). However, the existence of in-service training was initiated by John Macfarlane, the first Librarian of the Imperial Library (Now National Library) at Calcutta from 1901 to 1906. Dr SR Ranganathan, the father of Library Science, is for the spread of LIS education and research in India. Chronological order in which some of the courses for LIS education is as follows:

Table 1

Sr. No.	Year	Name of the Institute /Body	Name of the Course
1	1929	Madras Library Association	Certificate Course
2	1935	Bengal Library Association	-do-
3	1935	Andhra University	-do-
4	1937	University of Madras	PG Dip in Lib Sc
5	1946	University of Delhi	-do-

### Andhra Pradesh

Library movement in Andhra Desa is described as the peoples movement because it was a common man who took the lead in the establishment of the libraries and the reading rooms. In Telegana Region in the year 1904, Raja Raja Narendra Andhra Basha Nilayam, was established at Warangal. Sri Krishna Devaraya Andhra Basha Nilayam was established at Hyderabad in 1906. The Andhra Desa Library Association was founded in 1914 at Vijayawada. The Association started training classes for the library employees in the state in 1920.

### LIS Education Post Independence Era

Post Independence era of LIS education in India is dominated by LIS schools or University teaching departments. University of Delhi was first to start Master's degree in 1949 and awarded first Ph.D. in LIS in 1957. Dasgupta writes that "It was first university in the country as well as in (the British) commonwealth to introduce doctoral studies in library science"<sup>4</sup>, the university also holds the credit to establish an independent Department of LIS like in other disciplines. Master in Library Science course was renamed as Master in Library and Information Science (MLIS) in 1972 on account of a major course revision. The name of the Department was also changed as Department of Library and Information Science. The electronic era for LIS education can be traced back to 1972. The Course on "Computer Applications in Libraries" was introduced for the first time in the MLIS programme in 1972 by University of Delhi. Also University of Delhi started M Phil course in 1978. Over the period, LIS department were established at various universities in all parts of the country to meet growing demand for LIS professionals. In our country the higher education is increasingly very rapidly. In the academic year 1950 – 51 there were 28 Universities, 578 colleges. At present there are 677 Universities, 35,539 colleges in the country.

Table 1. Increase of Universities

Sr. No.	Year	Universities	Colleges
1	1970 - 71	103	3604
2	1980 - 81	133	4722
3	1990 - 91	190	7346
4	2000 - 01	256	12806
5	2006 - 07	387	21170
6	2012 - 13	677	35539

At present Out of 677 Universities, 298 are State Universities, 149 are Deemed Universities, 60 are Central Universities and 170 are Private Universities. It is shown in the Table No.2

Table No: 2 Types of Universities

Sr. No.	Category	No.
1	State Universities	298
2	Deemed universities	149
3	Central Universities	60
4	Private Universities	170
	<b>Total</b>	<b>677</b>

There was no laid down policy on Library Science education in India till 1961. Hence University Grants Commission Review Committee on Library Science was appointed in 1961 under the chairmanship of Dr. S.R.Ranganathan to lay down a detailed pattern for LIS education to update the LIS Curriculum. Thereafter, University Grants Commission appointed the Curriculum Development Committee (CDC) in 2001 to restructure the course in LIS, which promoted the LIS to include various aspects of Information Communication Technology (ICT). Today LIS education not only includes the library specific subject but it has extended to subjects like Computer applications, Statistics, Information Science, and Management studies and with the changing Scenario, modern librarianship has become a profession with a diversity of opportunities and challenges for LIS students and Professionals.

The Library education is such that the library professionals must withstand the continuing and ever changing information requirements and demands of the users and came up as successful professionals. The student population will learn the LIS, one way or the other, at one stage or the other, as a means of learning their chosen specialized subjects. This will automatically have its impact in the LIS education. Therefore, the library education in India has to be planned to keep pace with the changing needs of the Indian Society. Universities in India LIS Education offered by Universities in India: In India Library and Information Science education is increasingly slowly. At present the LIS education offering universities are mentioned in the Table.3.

Table 3. Number of Universities Offering LIS Course

Sr. No.	Category	No. of Universities
1	BLISc	120
2	MLISc	78
3	MLISc (Two Year Integrated)	21
4	M Phil	16
5	Ph D	63
6	D Litt	62

## Levels of LIS Education

The LIS education in India is offered at various levels such as Certificate, Diploma, Degree, Associateship in Information Science (AIS), Master Degree, PG Diploma, M.Phil, and Ph.D. These programmes are offered on regular as well as Distance/Correspondence courses.

**Certificate Course:** In past mainly, certificate courses were conducted by Library Associations. However, a few affiliated colleges and state central libraries started conducting this course. The duration of this course varies from few months to an academic year. The course aims to train the students for semi – professionals or junior level jobs. Eligibility for the course is high school or Senior Secondary education/intermediate. Kerala State Central Library is conducting CLISc course under “Earn while you learn scheme”. APLA, Vijayawada and APGP Hyderabad are also conducting CLISC course.

**Under Graduate/ Diploma Course:** The Diploma course is conducted at two levels, that is under graduate and postgraduate. Under graduate course by women polytechnic as a two-year course after higher secondary or intermediate. The job opportunity is junior librarian and Library assistant positions. **Bachelor of Library and Information Science (BLISc):** This is a one year degree course conducted by Universities after students graduate with a basic degree of any discipline from recognized university of University Grants Commission. Bachelors degree prepares students for professional positions in college and University Libraries or as a school librarian. At present 120 Indian Universities are offering BLISC.

**Post–Graduate (PG) Diploma Course:** Post – graduate diploma course in some select LIS areas of specialization are offered at University levels as a one – year course after the BLISc programme. Aim of this course is to enhance skills the professionals with the latest trends in the various aspects of libraries s. At present only four universities and one deemed university is conducting this course.

University of Kerala – PG Diploma in Information Technology

University of Mysore – Post MLISC Diploma in Library Automation.

Gandhigram Rural Institute – PG Diploma in Archives & Documentation Management

Osmania University – PGDDIM (Introduced in 2010)

University of Hyderabad – PGDLAN (Post Graduation Diploma in Library Automation and Networking) (stopped)

Master Of Library And Information Science (MLISC): It is a post – graduation course offered after BLISc. At present 99 Universities are offering MLISc through regular and distance mode

Associateship in Information Science: Since 1964, The Indian National Scientific Documentation Centre (INSDOC) New Delhi has been offering a two year programme in documentation. The same programme was renamed in 1977 as Associateship in Information Science (AIS). INSDOC has been merged with the National Institute of Science Communication (NISCOM) in 2002 and was renamed as National Institute of Science Communication and Information Resources (NISCAIR). The criteria for admission to the NISCAIR's programme is a master's degree in any subject or a BLISc with three year library experience. The Documentation Research and Training Centre (DRTC), which was established in 1962 at Bangalore, is also providing AIS course. Admission requirement for the programme is BLISc or master degree in any subject with a minimum of two years library experience.

Advanced Training Course in Information System Management and Technology: Duration of this course is one year. The National Centre provides advanced training course in Information System Management and Technology for Science Information (NCSI) an autonomous organization under the University Grants Commission located at Indian Institute of Science (IISC), Bangalore. (Dutto and Das, 2001,p.25)

Other Specialized Programmes: The Indian Association of Special Libraries and Information Centres (IASLIC) and the National Archives of India are also offering specialized courses. IASLIC offers a one – year diploma programme in archives and related subjects. (Pater, and Krishna kumar, 2001,p.20)

Master of Philosophy in Library and Information Science: This is a research programme offered by university departments for which Post Graduation in Library Science being the requisite qualification. The University of Delhi started this programme in 1978. At present 16 universities are offering this programme.

Doctor of Philosophy Programme: This is an advanced level research programme being offered after the completion of Post Graduation in Library Science or M.Phil degree in Library and Information Science. At present 64 Universities in India are providing facilities for the Ph.D. programme.

Doctor of Literature Programme: Two Universities, viz., Banaras Hindu University, Varanasi, and Utkal University, Bhubaneswar, are offering D. Litt Programme in Library Science. So far only one D.Lit degree has been awarded in India since 1992 by Utkal University Bhubaneswar to Dr.D.B. Shukla. (Kumar, 1998,p.8)

## Curriculum

The term “Curriculum” covers a group of activities or learning experiences designed explicitly to meet certain educational needs (Day, 1997). A curriculum is a key factor shaping the educational outcomes of a programme and that, the way it is developed and delivered affects the experience of students in the programme (Lester,2011).

## Curriculum Development

Curriculum development is generally considered as a continuous process of advancing and revising the course contents over a period of time, which has no terminal point. In other words, the procedure of developing a curriculum has no end. It usually begins with the identification of objectives for the proposed programme of study. Curriculum development is a process whereby the choice of designing a learning experience for students are made and then activated through a series of coordinated activities(Wiles and Bondi,2007). Saad(2005) stated that curriculum development simply refers to the method of producing structured educational programme, which is generally part of the social transformation or change in the educational sector. Curriculum development, according to Lawal (2000), refers to the continuous review of course content and relationships undertaken as required: such as, when the employment market, or professional thoughts, or manpower forecast, or the trend of research development involves series of activities that encompasses syllabus formation, determining programme aims and objectives, course contents to ensure that they are relevant and adequate in meeting the demand of the ever changing job market.

## LIS Curriculum

LIS education in India is in a better position than her counterparts because of its strong foundation. The last decade has witnessed the organization of conferences, seminars and workshops on IT based themes. The UGC Model Curriculum has succeeded to some extent to bring uniformity in LIS education. India has National Policy on Education in general, but there is a dearth of National Policy in LIS. There is also an absence of a national body to make projections for manpower requirement at different levels. The Working Group on Libraries (7) raised a new hope in this regard by recommending the permanent National Commission on Libraries. Since its inception in 1956, the UGC set up following committees for improvement of LIS education vis – a – vis services:

- 1 Ranganathan Committee on University and College Libraries, 1957
- 2 Ranganathan Committee on Library Science Education, 1965
- 3 Kaula Committee on Curriculum Development in LIS Education, 1993
- 4 Karisiddappa Committee on Curriculum Development, 2001

The recommendations of these committees have overhauled the LIS education and services from time to time. The National Knowledge Commission (2005) set up by Planning Commission recommended setting up of 1500 universities by 2015. If this target is attained it would open doors of more job opportunities for LIS professionals at different levels.

With the growth of information technology, LIS schools have understood the need of periodic examination and analysis leading to necessary changes and improvements in curriculum for the interpolation of new and fast developing areas of information technology and computer science. The objective for training of LIS professionals is to promote library, to educate, to articulate and provide for the need of the clientele to increase productivity and economy. Curriculum is the core of the reform. Most of the library schools and departments have revised or in the process of re-designing their curricula. In their curricula, course relating to traditional library science with names such as “History of Books” and “Libraries” disappeared. Instead, many computer – related courses were added. Examples of some of the topics included are:

An Introduction to Computers;  
Programming Design;  
Database Management;  
Computerized Information Networks;  
Design and Analysis of Computer Application Systems; and  
Computerized Information Retrieval.

#### Accreditation of Courses

Accreditation is crucial for quality assurance to the students and public. The prescription of norms and standards and their adherence is decisive for quality enhancement and optimum utilization of resources. Though, the LIS education is being imparted in India for more than 100 years, but no system of accreditation of LIS schools/department exist at national level by any professional organization. Consequently, new LIS schools/departments are mushrooming without having infrastructure facilities, information resources and basic practical tools(classification schemes, cataloguing codes and lists of subject headings). The report of the Committee on National Policy on Library and Information System (NAPLIS) stressed the need for such a body (Agarwal, 1977).

The University Grants Commission, India appointed a Committee “UGC Review Committee on Library Science in Indian Universities” under the Chairmanship of Dr. S. R. Ranganathan in the year 1961 and the report was published in 1965. The UGC established National Assessment and Accreditation Council, an autonomous body to assess and accredit the higher education institutions including universities, colleges and departments/schools/centre of the universities. It has assessed and accredited a large number of universities and colleges throughout the country, but yet to inaugurate the accreditation of LIS schools/departments. The UGC sponsored national seminar on Accreditation of LIS schools in India, held at Nagapur University in 1994 concluded with a need to establish national council for accreditation under name “Indian Council for Accreditation of Library and Information Science Education (ICALISE)”. (8)

### LIS Professional Bodies

India's LIS education system requires a strategic planning, in order to develop a comprehensive LIS curriculum at the national level. The Government of India has encouraged the application of computers and use of telecommunication through various policy decisions. The Government should play a leading role in promoting LIS education in India, in creating more job opportunities for LIS professionals and removing disparity in pay scales among LIS professionals. LIS professionals' pay are low in India and they should be paid more in the present scenario. The role of University Grants Commission is very important in designing the curricula and in providing guidelines for developing LIS education in the country. The Professional bodies like India Library Association (ILA) and State Library Association should organize useful courses, seminars and conferences so that the library professionals may increase their knowledge and efficiency in the application of ICT in their work. In this context, the role of LIS schools and faculties is extremely important to improve LIS education. Similarly, Universities Grants Commission (UGC), the National Information System for Science and Technology (NISSAT) ([www.dsir.nic.in/vsdsir/division/nissat/nissat.html](http://www.dsir.nic.in/vsdsir/division/nissat/nissat.html)), the National Social Science Documentation Centre (NASSDOC), NISCAIR (National Institute of Science communication and Information Resources) earlier known as Indian National Scientific Documentation Centre (INSDOC) ([www.insdoc.org](http://www.insdoc.org)), the Defence Scientific Information & Documentation Centre (DESIDOC)([www.drdo.org/labs/compsci/desidoc/index.shtml](http://www.drdo.org/labs/compsci/desidoc/index.shtml)), university libraries, library associations, library and information science departments should play a pivotal role in this direction.



## Significant Features of LIS Courses:

Academic institutions act independently in activities such as admission, tenure, curriculum development, and educational grading and organization such as the University Grants Commission (UGC) merely serve an advisory role. Although in general all education departments suffer from inadequate levels of faculty, financial assets, equipment, special library and even accommodation, a handful of universities are in a relatively better position. Student graduates from these universities proves better in the job market.

The following are some suggestions for improving LIS education in India.

LIS schools/departments may be provided with IT laboratories fully equipped with the latest hardware and software including Internet connectivity, networking and library management software.

National centre for education and research should be established to plan coordinate and cooperative programmes, like exchange of personnel, curriculum planning, extension lectures, continuing education programmes.

LIS departments provide training programmes with ICT specialization for teacher librarians.

Seminars, tutorials, assignments and field tours should effectively be introduced.

Syllabus should be revised from time to time with the advent of the information technology changes.

The syllabi in the LIS department should view the development of information technology, information resources, information access and their impact on libraries and library profession.

Continuing education/ in – service training facilities should be recognized as an essential part of manpower development programmes.

There is a great necessity of funds for the acquisition of new technology in order to enhance the services in the library.

There is a need for strong networking of libraries for resources sharing.

The library professionals need more recognition and they are responsible for planning new information system. More orientation courses and refresher courses should be conducted for the LIS professionals and teachers.

The LIS students may have training in libraries, which should have IT environment for gaining practical experiences.

Short term and long term programmes such as seminars, conferences, and workshops be organized at regular intervals by library schools and library associations.

National centre for education and research should be established to plan and coordinate cooperative programmes, like exchange of personnel, curriculum planning, extension lectures, and continuing education programmes and so forth.

To improve quality of research, talented scholars should be provided financial assistance by research organizations.

### Challenges of LIS education

The UGC developing the model curriculum (2001) and demanding all the teaching departments to revise their syllabi, the LIS professional and educationists' experiences following the challenges.

There is wide gap between ICT and education system in India.

Most of the LIS departments do not have minimum qualified IT oriented faculties with some exceptions and also do not have sufficient number of equipments to teach the practical for the subjects.

The faculty improvement programme is not strong and effective because of shortage of manpower and budgetary provision at the individual college level.

The developments in www and Internet technology have brought great challenges to the LIS professionals.

Different mode of publications i.e. e-publications and hyper media.

Introduction of multimedia, hypertext, e-book and e-journals etc. in the library collection.

Globalization of library profession and library education.

Increased use of computers and network facilities, which have changed the information needs of the people. Different type of employment opportunities, which are coming up for LIS graduates due to the technological changes.

In India, there is also resistance to change in the new settings and work culture.

Survival of LIS profession in India in an ethical manner.

Giving more importance in deciding the research topics, which should be related to the current issues such as “Need of LIS professionals in electronic environment, etc”. The LIS education however, should have a minimum core subject along with a lot of Elective subjects on the advanced topics.

#### LIS Education in Andhra Pradesh: A Brief Review

Andhra Pradesh State Central Library and Andhra Pradesh Library Association, Vijayawada are conducting CLISc course. The duration of this certificate course is of six months. Out of a total 43 Universities in Andhra Pradesh, 32 are State Universities, 8 Deemed Universities and 3 are Central Universities. As many as 11 Universities are offering LIS education on regular and distance mode.

Table 4: List Of Universities Offering Lis Education In Andhrapradesh

Sr. No	Name of University	Year of Establishment	Web Address
1	Osmania University	1918	<a href="http://www.osmania.ac.in">www.osmania.ac.in</a>
2	Andhra University	1926	<a href="http://www.andhrauniversity.edu.in">www.andhrauniversity.edu.in</a>
3	Sri Venkateswara University	1954	<a href="http://www.svuniversity.ac.in">www.svuniversity.ac.in</a>
4	University of Hyderabad	1974	<a href="http://www.uohyd.ac.in">www.uohyd.ac.in</a>
5	Kakatiya University	1976	<a href="http://www.kuwarangal.com">www.kuwarangal.com</a>
6	Nagarjuna University	1976	<a href="http://www.nagarjunauniversity.ac.in">www.nagarjunauniversity.ac.in</a>
7	Sri Krishna Devaraya University	1981	<a href="http://www.skuniversity.org">www.skuniversity.org</a>
8	Dr.B.R.Ambedkar Open University	1982	<a href="http://www.braou.ac.in">www.braou.ac.in</a>
9	Dravidian University	1997	<a href="http://www.dravianuniversity.ac.in">www.dravianuniversity.ac.in</a>
10	Dr B.R. Ambedkar University (Srikakulam)	2008	<a href="http://www.brau.in">www.brau.in</a>
11	Krishna University	2008	<a href="http://www.krishnauniversity.ac.in">www.krishnauniversity.ac.in</a>

## Conclusion

LIS education in India is currently passing through a turning point and has become a fast developing subject with a multidisciplinary approach. Information needs of users are not only growing but also widening. LIS curriculum is to be shaped as per the needs of the professional requirement at the job market. LIS departments should aim to prepare professional who can blend in 'the political, educational, psychological, cultural and technological changes that are taking place.' LIS Professionals who lack ICT skills are encountering problems in carrying out their tasks., information literate professionals must have the ability to locate, evaluate, and use information effectively. ICT has brought many avenues for librarianship to increase their own capabilities in organizing and retrieving information in the electronic era. Library professionals require training and retraining to use IT based resources and services, such as e – mail, FTP, telenet, www, browsers, search engines, databases, system software, application software, electronic journals, computer conferences, scholarly discussion lists, mailing lista, Usenet newsgroups, websites, CDs and DVDs. The library curriculum should strike the optimum balance between theory and practice (Mahapatra& Das, 2000). Courses on application of new technology should be provided. The information needs of user community and the overall changes that have taken place due to need based adoption of ICT, the work in libraries has necessitated implementation of appropriate changes in the Library and Information Science syllabi for various levels of courses. The present LIS education system indicates that the quality improvement is essential and unavoidable, not only for its survival but also for facing the major changes and challenges of today and tomorrow. The LIS education should not be limited up to earn the Degree for entering in this profession. The education is life long Process which starts form, cradle and ends up to the grave. So LIS education should be updated from time to time.

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