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# AIMS Journal of Research

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<b>Recruitment Process Outsourcing in Information Technology Sector</b>	Kiran Reddy and Bhavya Bhanu
<b>Finding First Principal Component using Power Method</b>	B. Sarojamma, A Kullaya Swamy and P. Rama Krishna Reddy
<b>Changing Landscape of Education in Response to Technological Advances</b>	T Siddaiah
<b>Few observations on the Psycho-Socio Dynamics of Rapes and impact in contemporary societies</b>	Dr.Shanta Y. Bangari
<b>Modern Electronic Gadgets and Advancement of ICT are increasing opportunities for lifelong learning with special emphasis on English language.</b>	Dr. Basappa Y. Bangari

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## Editorial

### Editorial

This first issue of the 14th volume consists of five research papers. As a continuous practice, we strictly adhere to double-blind peer review before we finalize the papers for publication.

**Kiran Reddy and Bhavya Bhanu** in their paper entitled, **Recruitment Process Outsourcing in the Information Technology Sector**, carried out a study on the recruitment process in internal HR departments. This study intended to determine Recruitment Process Outsourcing effect on IT sector. The study revealed RPO's enabled IT organizations to avail qualitative, expertise and cost-effective recruitment services. It also helped IT organizations' hire the right candidates through effective use of technology and innovative recruitment practices. This study indicated that resistance from senior management and difficulty in finding a vendor is the major negative outcome of RPO.

**Sarojamma et.al.** in their paper entitled, Finding First Principal Component using Power Method, carried out a study on the usage of power method in finding First Principle in mathematical perspective. This study reveals that the Power method is converged a true largest Eigenvalue in 20 iterations and method is the most suitable tool for finding the largest Eigenvalue when the predictor variables are high in number.

**Siddaiah T** in his paper entitled, Changing Landscape Of Education In Response To Technological Advances, tried to explore the Technological advances, Digitalization, and automation, etc. In this study, the author explained the need for core skills and how to approach complex challenges in the changing environment. Also, explained the need for the change of curriculum and pedagogy of education programs development and execution process.

**Shanta Y. Bangari**, in her paper entitled, Few observations on the Psycho-Socio Dynamics of Rapes and Impact In Contemporary Societies, made an attempt to explore the psycho-socio dynamics of rapes and impact on the younger generation in contemporary society. The author explained that Contemporary societies are a reflection of our present generation and human culture. Gender bias and educated women are once again questionable in metropolitan cities.

**Basappa Y. Bangari** in his paper entitled, Modern Electronic Gadgets And Advancement of ICT are Increasing Opportunities For Lifelong Learning With Special Emphasis On the English Language, tried to depict the role of modern electronic devices and the advancement of ICT creating wonderful opportunities for lifelong learning. The author explained the role of Technological advancements in the education system. The apt and wise use of these technologies would create wonders in language learning and acquiring core skills.

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# RECRUITMENT PROCESS OUTSOURCING IN INFORMATION TECHNOLOGY SECTOR

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## Key Words:

Recruitment process outsourcing (RPO), Recruitment, Outsourcing, Organization.

## Abstract:

Recruitment process outsourcing has acquired importance with changing organizational structure, rigid project time limit, unavailability of sufficient time for internal HR department to focus on recruiting personnel, incompetence in amalgamating all phases of recruitment and organisational geographical expansion. This study is built after focusing on available previous literature about recruitment process outsourcing, mixed approach has been chosen to investigate and validate the context related to RPO in IT sector. Thus the study intends to determine Recruitment Process Outsourcing effect on IT sector. The researcher has collected the data using convenience sampling, mail survey and snow ball sampling approaches, through a structured questionnaire with a sample size of 56 select IT organisations as respondents. Gaining a clearer perspective on Recruitment Process Outsourcing in IT sector the expected outcome of this study

## Introduction

The concept of outsourcing part or whole of the recruitment process was first started in 1970s in US with the demand of highly competitive labour force increasing in IT sector. In order to minimize recruitment expenses organisations started to analyse recruitment stages that could be outsourced. Initially RPO services usually consisted purchase of potential candidates lists from RPO vendors.

Later in 1980's and 1990's companies opted to cut investment of fixed cost on Human resource which was directly linked to recruitment. As labour market become more competitive James Caan was first person to develop RPO model in UK. By 2000 companies began outsourcing major portions of recruitment activities as RPO became a strategic tool for talent issues faced by companies. The necessity to hire qualitative talented individuals, improve the efficacy of recruitment, enhance scalability and flexibility among workforce paid way to drastic changes in RPO industry which provided solution to talent management. Since then, fundamental changes in world labour market has revolutionized RPO industry in terms of process, method and services delivered to clients.

IT sector is a dynamic fastest growing sector which has created humongous employment opportunities, it is estimated that 2.5 to 3 million new jobs will be

created in IT sector by 2025 (source: Nasscom) indicating RPO plays a major role in hiring prospective candidates. IT companies avail RPO services for various reasons such as create prospective candidate pool, large scale hiring, acquire niche skills, tap passive job seekers etc. Outsourcing recruitment process in IT industry which is tackling attrition rate of 50-60 percent can facilitate companies in cost minimization immensely and focus on other core HR issues. RPO's also facilitates active job seeker to find out latest job opportunities in client organisations ensuring mutual benefit to both the parties (client and job seekers). RPO providers in IT sector are taking the quality, flexibility, scalability and cost efficiency route at a higher level to fill requisitions with top quality hires. Hence in today's dynamic and constantly changing labour market RPO industry has emerged as a process which IT organisation has endorsed to hire right talent at lower cost.

## Statement of Problem

RPO is the practice pursued for enhancing the overall effectiveness and efficiency of the organisation through administrative time saving by outsourcing recruitment activities to specialized recruitment agencies which offers competitive expertise required. Dynamic market change has forced organisations to change their thought process and focus on the HR aspect of the organisation.

Traditional recruitment process followed by organisation were time consuming as a result internal HR would fail in their everyday core operational work, leading to lower effectiveness, lower control on employees, that caused negative ripple effect and the alternative to escape these situations for organisations seemed to be Recruitment process outsourcing. RPO is the latest practice being followed by middle and large sized IT organizations. This study attempts to analyse the reasons, objectives, factors, and negative outcomes of RPO in IT sector.

### Literature review

A review of related literature in the area of emotional intelligence and inter-personal relationships in this research has provided an insight into many factors. It has also provided direction in designing the present study. Having reviewed several studies and having identified the gap, an imperative need was felt to undertake the present investigation.

Vipin Nadda, Zaman Rafiq and Pankaj Tyagi (2017) 'Effectiveness and Challenges of Recruitment process outsourcing (RPO) in the Indian Hotel Sector'; the research objectives are dealt with diverse issues related to RPO and range of perspectives in using RPO services. This helped in identifying factors influencing the basis for outsourcing the recruitment processes. The research found that RPO of late has gained importance due to changing organizational structure, stringent project deadlines, inadequate time with the in-house HR team for recruiting and integrating all stages of recruitment due to expansion of geographies. The key findings indicated that the organization's culture persuade firms positively in adopting RPO services during expansion of geographies and globalization.

Dr. Sushma Tiwari (2016) 'Recruitment Process Outsourcing in Indian Companies' The research objective was to identify practices that firms used to hire employees. The study also focuses towards determining RPO effect on the Indian Companies. Findings suggest 40 per cent of firm's recruitment costs is saved by outsourcing and experience, expertise and economies of scale of vendors can help firms to hire qualitative candidates. The research also indicates that RPO industry in India is valued at Rs.400 crore and forecasted grow rate is at 40-50 per cent in the present Indian market.

Bryan Duggan (Duggan – Croy, 2004) 'Should you outsource recruitment?' In The Supply Management' the researcher lists a number of evidences urging the

use of RPO. Firstly, acquisition of key personnel who adds strategic critical value to organizations can be acquired by using RPO services. Secondly the costs benefit associated with (RPO) for hiring the most suitable candidate. Thirdly using RPO organizations' are able access to a greater number qualitative applicant's pool. Lastly research also points out in-house personnel managers do not have expertise skills and experience required to hire the right talent and that internal hiring is time-consuming process of organizations'

### Objectives of the study

The study was undertaken with the following objectives:

- To ascertain various recruitment services outsourced by Information Technology (IT) organizations.
- To examine the reasons why IT companies outsource recruitment activities.
- To assess the benefits of Recruitment process outsourcing (RPO) are matching the expectation of IT organizations.
- To study factors influencing RPO
- To analyse negative outcomes and limitations of RPO.

### Methodology

The study is an empirical and descriptive type of research. With a sample size of 56 IT companies as respondents who outsourced recruitment activities to vendors, the survey was undertaken using convenience sampling, mail survey and snow ball sampling approaches.

### Sources of Data

The data required for the present study has been collected from both primary and secondary sources. The primary data is collected from questionnaire and also by direct interview with the recruiters, HR managers and employers who opted for recruitment process outsourcing services. Secondary data was collected from journals, periodicals, newspapers and articles available on the chosen topic, websites. Informal discussions and interactions with recruiters and employers were also undertaken to collect data.

### Results and discussions

#### Sample profile

Responses were obtained from various responding IT organizations using RPO services in Bangalore city. Majority of them are large serviced based organisation (55%). Most of them exist in the RPO market for more than 10 years (68.7%) and (76.8%)

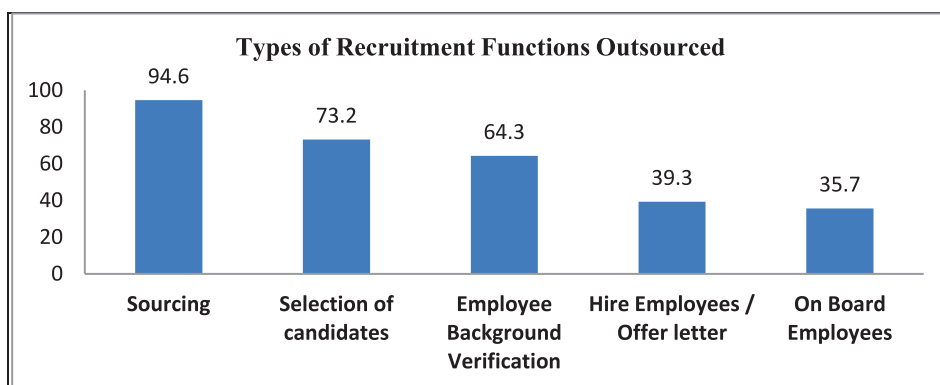
of the responding organisations availing RPO services most of them are having manpower strength of more than 250 employees. This indicates that the sample represents organisations outsourcing recruitment functions to RPO's delivers tangible benefits to the organisation and ensures HR Professionals allocate their time effectively in strategic role supporting organisational performance.

### Types of Recruitment Functions Outsourced

Recruitment is a human resources discipline involves gamut of stepladders from posting job vacancies, sourcing, making hiring decisions, ordering background investigations and pre-employment drug tests, to placing and on-boarding

employees. The above table depicts out of 56 organisations surveyed for outsourcing various types of recruitment activities, it was found that (94.6%) responding organisations outsourced sourcing activity; (73.2%) selection of candidates; (64.3%) employee background verification; 39.3% hire employees/offer letter; and (35.7%) outsourced on boarded employee's activity.

From the above data, it can be interpreted that majority of respondents have opted for outsourcing sourcing, selection of candidates and employee background verification activities, indicating that RPO's are consistent in providing qualitative, expenditure effective, creative and modified services which exceeds clients' expectations.



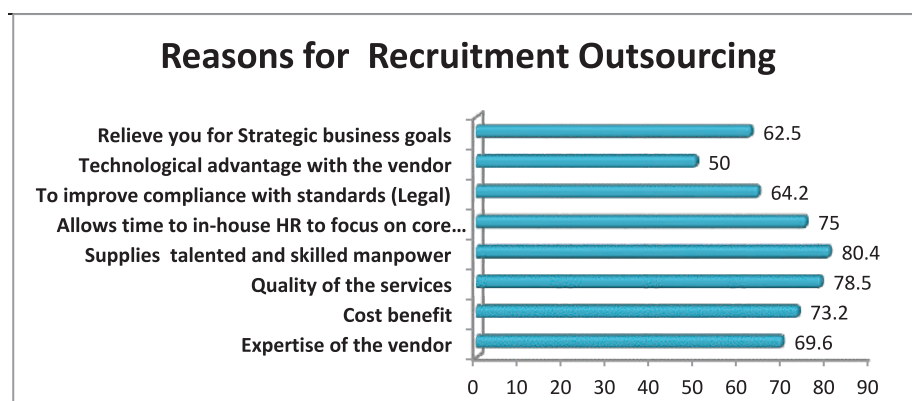
(Figure 1)

### Reasons for IT organisation to avail RPO Services

Recruitment Outsourcing is the process of allocating hiring function to external agencies, and leveraging benefits of qualitative, expertise and cost effective recruitment services. when Outsourcing transgresses national boundaries it takes the form of off-shoring. The above table indicates various reasons for outsourcing recruitment functions by IT organisation. Out of 56 IT organisations surveyed (80.4 %) of responding organisations felt vendors supply talented and skilled manpower ;( 78.5%)

provides quality of the services; (73.2%) felt it is cost benefit ;( 69.6%) Expertise of the vendor ;( 64.2%) improves compliance with standards (Legal); (62.5%) Relieves HR for Strategic business goals and lastly (50%) because of technological advantage with the vendor.

Form the above data it can be summarized IT companies outsource their recruitment activity based on organisations objectives and purpose of the exercise and also IT organisations use outsourcing has an effective business strategy tool to cut and edge against their competitor.



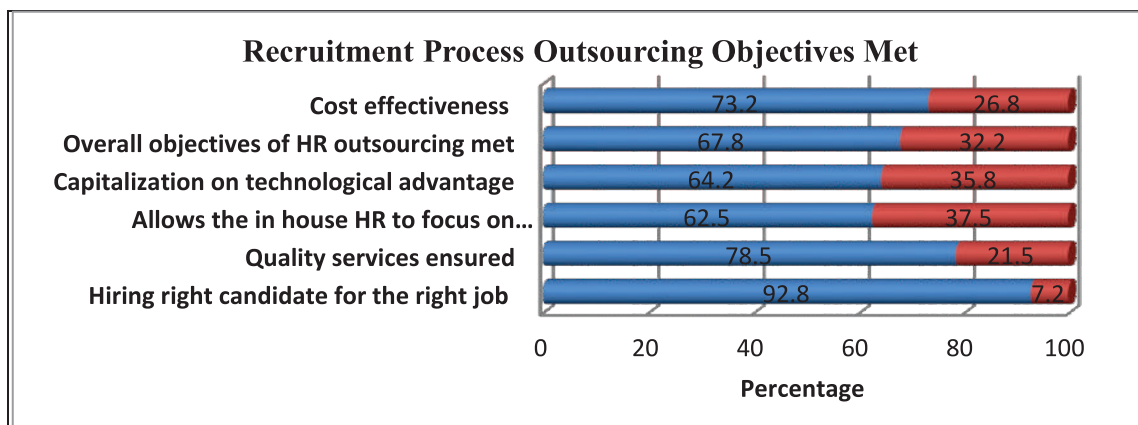
(Figure 2)

### Recruitment Process Outsourcing Objectives Met

Organisational objective can be a specific goal that an individual or system intends to accomplish within a time frame from the available organisational resources. The above frequency distribution depicts that IT organisations through outsourcing recruitment activity have successfully met (92.8%) Hiring right candidate for the right job; (78.5%) Quality services ensured; (73.2%) Cost effectiveness ;( 67.8%) Overall objectives of HR outsourcing met ;( 64.2%) capitalization on technological advantage ;( 62.5%) Focus on strategic Business Planning objectives of the firm.

outsourcing met ;( 64.2%) capitalization on technological advantage ;( 62.5%) Focus on strategic Business Planning objectives of the firm.

From the above data, it can be interpreted that IT organisations are able to meet the overall recruitment objectives through recruitment process outsourcing which enables the organisation to get qualitative, expertise and cost effective recruitment services. It also helps the organisations hire right candidates through effective use of technology and innovative recruitment practises



(Figure 3)

### Factors affecting the success of Recruitment Process Outsourcing

Table: 1

Critical factors affecting the success of Recruitment Process Outsourcing	Mean	Std. Deviation
Clear objectives and expectations of outsourcing activities	4.089	.6113
Choice of the right outsourcing partners	3.804	.7959
High and effective support and involvement by top Management	4.089	.7693
Effective organizational communication	3.804	.8617
Effective use of performance incentives and penalties	3.857	.8405
Getting the right people involved	4.018	.7975
Emphasis on short and long-term benefits	3.839	.7811
Adequate and objective performance criteria and feedback	3.893	.7551
Adequate control mechanism to monitor outsourcing project	3.893	.7306
Effective coordination between company and vendor	3.964	.8304

The mean score revealed that the RPO activities are highly effective with respect to the managerial aspects with the mean score of 4.065 with clear objectives and expectation of outsourcing activities, high support and effective involvement by top management and getting the right people are highly influential in success of RPO activities. And the choice of the right outsourcing partner and effective organisational communication are the least factors with a score of 3.804. This shows that the IT companies' prerogative focus is on managerial aspects of the organisation but the administrative practices such as choice and communication channels of RPO's need greater attention for effective progressiveness. Whereas effective coordination between company and vendor are on the second rank in order to measure the success of RPO activities in IT companies. The factors are then followed by adequate and objective performance

criteria and feedback as well adequate control mechanism to monitor outsourcing project, which are being practiced in the IT companies to an extent of 3.893. Effective use of performance incentives and penalties has a higher extent with the mean score of 3.857. Emphases on short and long-term benefit are second last in the ranking having the mean score of 3.839.

The analysis of the above data indicates that, the standard deviation of all the factors is less than one which shows that there are lesser variations in measuring the critical factor affecting success of the RPO activities. Lesser the standard deviation, the better it is. Thus to conclude it can be summarized that IT companies have emphasised on short and long term factors which are crucial for the success of RPO

### Negative Outcomes of Recruitment Process Outsourcing

Table 2

Negative Outcomes of Recruitment Process Outsourcing	Mean	Std. Deviation
Legal (contractual) disputes	3.375	.7991
Difficulty in finding vendors	3.357	.7961
Selecting the right vendors	3.607	.8018
Maintaining confidentiality of employee data	3.607	.8671
Resistance from senior management	3.455	.8124
Resistance from employees in general	3.321	.7412
Resistance from Internal HR	3.286	.8679

The mean scores of negative outcome of recruitment process outsourcing activities are highly impacted on selecting the right vendor and maintaining confidentiality of employee data with the mean score of 3.607. And the resistant from internal HR, is the least negative out with the mean score of 3.286. Indicating IT organisations should focus on selecting the right vendor and management should ensure maintaining confidentiality of employee data for the effective performance of RPO activities. Legal disputes are on the second rank in order to measure the negative outcome of RPO activities.

Resistance from senior management and difficulty in finding vendor is the major negative outcome of RPO activities with the mean score of 3.455 and

3.357 respectively. Resistance from employee in general are second last in the ranking having the mean score of 3.321. This shows employees are resisting outsourcing recruitment activities in the organisation. The standard deviation of all the factors is less than one which shows that there are lesser variations in measuring the negative outcome of RPO activities. Lesser the standard deviation, the better it is

### Outcome of the Study

Recruitment activity is a decisive process and a core HR activity of an organisation. it directly deals with the current and future human resource required of an organisation. RPO involves transfer (outsourcing) of all or some of the recruiting activities and processes



to a third party provider who performs internal recruitment function of identification and hiring right candidate for any vacant positions in an organization. RPO leverages market knowledge, industry expertise and procurement of talent to improve quality of hire, speed of delivery and cost containment. The overall assessment of the results showed:

- RPO's consistently provided qualitative, expenditure effective, creative and modified services exceeding clients' expectations.
- It was found that IT organizations outsourced their recruitment activity based on organization their objectives and used RPO's an effective business strategy tool to cut an edge against their competitor
- The study revealed RPO's enabled IT organizations to avail qualitative, expertise and cost effective recruitment services. It also helped IT organizations' hire right candidates through effective use of technology and innovative recruitment practices
- It was found standard deviation of all the factors is less than one indicating there are lesser variations in measuring the critical factor affecting success of the RPO activities. Lesser the standard deviation, the better it is. Showing IT companies have emphasized on short and long term factors which are crucial for the success of RPO
- Lastly results the study indicated that resistance from senior management and difficulty in finding vendor is the major negative outcome of RPO.

## Conclusion

In today's business landscape, the battle for talent is ongoing. According research workforce planning and talent acquisition is the top agenda for C-suite leaders. Recruitment process is a new business trend and seasoned business process for creating a competitive advantage.

Today's IT organisations of all sizes and across domains utilise RPO services as a strategic tool for agile management projects and to keep pace with changing market demands. RPO services are swiftly acquiring recognition among IT organisations as it facilitates internal HR to focus on their core business activities and reduces substantial overhead cost, by re-engineering recruitment processes, employing best practice, and substituting a fixed cost with variable cost structure. It also helps organization to

mitigate risk associated with instable market conditions, and with non-compliance to legislative and regulatory change.

Improving economic conditions, growing focus of large multi-national organisations towards expanding their business organisations and rising penetration of new small and medium- sized IT organisation has led to increase demand for talent acquisition providing ample scope for RPO industry to grow and sustain in the long run.

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# Finding First Principal Component using Power Method

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## Key Words:

Power Method,  
Variation,  
Reduction,  
Eigen values,  
PCA.

## Abstract

*The primary purpose of principal component analysis (PCA) is to reduce the dimension of a large data set containing interrelated variables into a more concise data set that retains most of the existing variations. The objective of this paper is to intuitively and mathematically explain the usage of Power Method in finding First Principal.*

## Introduction

Principal Component Analysis (PCA) is a helpful strategy for lessening the quantity of indicators in the model by dissecting the information factors. It is particularly significant when we have subsets of estimations that are estimated on a similar scale and are profoundly associated. All things considered it gives a couple of factors (frequently as few as three) that are weighted direct blends of the first factors that hold the informative intensity of the full unique set. PCA is proposed for use with quantitative factors. For straight out factors, different strategies, for example, correspondence examination, are increasingly reasonable.

A further utilization of PCA is to comprehend the structure of the information. This is finished by looking at the loads to perceive how the first factors add to the diverse primary segments. An answer is to standardize the information before playing out the PCA. Standardization (or institutionalization) implies supplanting every unique variable by an institutionalized adaptation of the variable that has unit fluctuation. This is effectively practiced by separating every factor by its standard deviation. The impact of this standardization (institutionalization) is to give all factors parallel significance regarding the changeability.

## Objectives of the study

At the point when the objective of the information decrease is to have a littler arrangement of factors

that will fill in as indicators, we can continue as following: Apply PCA to the informational index. Utilize the yield to decide the quantity of primary parts to be held. The indicators in the model currently utilize the (diminished number of) important scores sections. These new components are then treated as the indicators. Among these we currently focus on first essential part utilizing force strategy. This is most valuable when the quantity of factors is colossal in number. With this power method we can a first principal component with more exactness.

## METHODOLOGY OF THE STUDY

### A. Power Method

In this text, we focus on algorithms that compute the eigenvalues and eigenvectors of areal symmetric matrix. Particularly, we are interested in finding the largest eigenvalue and the corresponding eigenvector. In this method the first involves multiplying the symmetric matrix by a randomly chosen vector, and iteratively normalizing and multiplying the matrix by the normalized vector from the previous step. The convergence is geometric, i.e. the '1 distance between the true and the computed largest eigenvalue at the end of every step falls geometrically in the number of iterations and the rate depends on the ratio between the second largest and the largest eigenvalue.

Notations: Let  $\mathbb{S}^n$  denote the space of real symmetric matrices in  $\mathbb{R}^n$ .

**Power Method Algorithm:**

Given  $A \in \mathbb{S}^n$ , find the largest eigenvalue and their associated eigenvector.

The power method algorithm is as follows:

Initialize:  $q_0$  = a random vector

**for**  $k = 1, 2, \dots$  **do**

$$z_k = Aq_{k-1}$$

$$q_k = \frac{z_k}{\|z_k\|_2}$$

$$\hat{\lambda}(k) = q_k^T A q_k$$

**end for**

**B. Principal Components**

Let the random vector  $\mathbf{X}' = [X_1, X_2, \dots, X_p]$  has the covariance matrix  $\Sigma$  with eigenvalues  $\lambda_1 \geq \lambda_2 \geq \dots \geq \lambda_p \geq 0$ .

Consider the linear combinations

$$\begin{aligned} Y_1 &= \ell'_1 \mathbf{X} = \ell_{11}X_1 + \ell_{21}X_2 + \dots + \ell_{p1}X_p \\ Y_2 &= \ell'_2 \mathbf{X} = \ell_{12}X_1 + \ell_{22}X_2 + \dots + \ell_{p2}X_p \\ &\vdots \\ Y_p &= \ell'_p \mathbf{X} = \ell_{1p}X_1 + \ell_{2p}X_2 + \dots + \ell_{pp}X_p \end{aligned}$$

Then,

$$\begin{aligned} \text{Var}(Y_i) &= \ell'_i \Sigma \ell_i \quad i = 1, 2, \dots, p \\ \text{Cov}(Y_i, Y_j) &= \ell'_i \Sigma \ell_j \quad i, j = 1, 2, \dots, p \end{aligned}$$

The principal components are those uncorrelated linear combinations  $Y_1, Y_2, \dots, Y_p$  whose variances are as large as possible.

The first principal component is the linear combination with maximum variance. That is, it maximizes  $\text{Var}(Y_1) = \ell'_1 \Sigma \ell_1$ . It is clear that  $\text{Var}(Y_1) = \ell'_1 \Sigma \ell_1$  can be increased by multiplying any  $\ell_1$  by some constant. To eliminate this indeterminacy, it is convenient to restrict attention to coefficient vectors of unit length. We therefore define First principal component = linear combination  $\ell'_1 \mathbf{X}$  that maximizes  $\text{Var}(\ell'_1 \mathbf{X})$  subject to  $\ell'_1 \ell_1 = 1$ .

**C. Power Method in finding First Principal Component**

We now here derive the Power method to find first principal component as follows:

Initialize:  $q_0$  = a random vector

**for**  $k = 1, 2, \dots$  **do**

$$z_k = \Sigma q_{k-1}$$

$$q_k = \frac{z_k}{\|z_k\|_2}$$

$$\hat{\lambda}_1(k) = q_k^T \Sigma q_k$$

**end for**



## SIMULATION RESULTS

To illustrate these methods consider a covariance matrix of four variables  $\Sigma = \begin{bmatrix} 19 & 30 & 2 & 12 \\ 30 & 57 & 5 & 23 \\ 2 & 5 & 38 & 47 \\ 12 & 23 & 47 & 68 \end{bmatrix}$ .

Here total variance is 182,  $Var(X_1) = 19$ ,  $Var(X_2) = 57$ ,  $Var(X_3) = 38$ ,  $Var(X_4) = 68$ .

First we find four principal components using R-software and are as follows

$$\begin{aligned} Y_1 &= -0.2353756X_1 + 0.4168420X_2 + 0.8350498X_3 - 0.27116935X_4, \\ Y_2 &= -0.4409738X_1 + 0.7412704X_2 - 0.5049628X_3 - 0.03275461X_4, \\ Y_3 &= -0.4707464X_1 - 0.4259191X_2 - 0.1651837X_3 - 0.75478811X_4, \\ Y_4 &= -0.7270064X_1 - 0.3087942X_2 + 0.1428938X_3 + 0.59639687X_4. \end{aligned}$$

Where  $Var(Y_1) = 116.269155$ ,  $Var(Y_2) = 61.415930$ ,  $Var(Y_3) = 2.516520$  and  $Var(Y_4) = 1.798395$ . The first principal component explains almost 64% of total variation. Now we will see how Power Method will converge to the largest eigenvalue in iterative procedure.

Iteration Number	Maximum Eigen value	Iteration Number	Maximum Eigen value
1	150	11	116.2781
2	119.5	12	116.2739
3	117.7822	13	116.2716
4	117.0561	14	116.2705
5	116.682	15	116.2698
6	116.4865	16	116.2695
7	116.3837	17	116.2693
8	116.3296	18	116.2693
9	116.3011	19	116.2692
10	116.286	20	116.2692
		21	116.2692

From the above simulation results we can observe that maximum eigenvalue is converging at 20<sup>th</sup> iteration and this is equal to variance of first principal component.

## R-PROGRAMMING CODE

**To read matrix, r-code**

```
isA=matrix(c(19,30,2,12,30,57,5,23,2,5,38,47,12,23,47,68),nrow=4,ncol=4,byrow=TRUE)
```

**To find eigenvalues and eigenvector, r-code is**

```
eigen(A)
```

**Power Method iterative r-code is**

```
u <- c()
v <- c()
u[[1]] <- c(1, 1, 1,1)
for (i in 1:50) {
  v[[i]] <- A %*% u[[i]]
  u[[i + 1]] <- v[[i]]/max(v[[i]])
  print(max(v[[i]]))
}
```

### Conclusion

We observed that Power method is converged a true largest eigenvalue in 20 iterations. This method is most suitable tool for finding a largest eigenvalue when the predictor variables are high in number. Because in data mining, data reduction plays a key role and many of the problems if we observe the first principal component explains almost 70% of the total data variation and this method achieved in our considered problem.

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# CHANGING LANDSCAPE OF EDUCATION IN RESPONSE TO TECHNOLOGICAL ADVANCES

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## Key Words:

## Abstract

*Technological advances provide greater work opportunities and better work culture, but demand different capabilities and skill sets from the workforce across industries and sectors. Digitalization and automation have transformed the way people think and work. Organizational structures and leadership styles do change in the knowledge based economic framework. Competencies and character qualities take precedence over other attributes. Students need to learn how to apply core skills and how to approach complex challenges in the changing environment. Accordingly, the curriculum and pedagogy of education programs need to be designed, developed and executed.*

## Introduction:

Digitalization and automation have been fundamentally impacting all walks of life and all sectors of the world economy. Artificial intelligence (AI), robotics, data analytics, Internet of Things (IoT), machine learning, deep learning, block chain technology, drones and other technologies are used in production, distribution and other facets of business to gain productivity, efficiency and cost effectiveness. As the new technologies come in, much of the human work tend to be crowded out necessitating the human beings to develop new skills. With the advent of new technologies, the task and job profiles have changed across the sectors. There is also a fear that the new wave of technological progress may displace several millions of workers and employees across the organizations. It does not mean that people will become jobless because of automation and digitalization. With digitalization and automation the cost of goods and services may become cheaper leading to higher demand for them and consequent creation of additional employment opportunities. Employment opportunities may further be enhanced with spill-over effects into other industries and services. New jobs are created in new areas related to platforms, robotics, artificial intelligence, etc. It is estimated that every high-tech job creates five additional low-tech jobs. But the distribution of jobs across industries and types of skill set required will be different. There are shifts in the structure of employment across the world economy. Artificial

intelligence has facilitated mimicking or automating even the cognitive skills. As new technologies are substituting for many jobs, there is a steady decline in jobs that involve routine manual and cognitive skills, while the jobs that require non-routine analytical and interpersonal skills are in the rise. As technologies progress further, even these difficult jobs may be performed by artificial intelligence and smart automation.

The new technologies, particularly smart automation and digitalization have been impacting the business models and organizational structures. For example, Uber, Ola, etc have been operating successfully on the platform model that involves a new kind of customer relationship and also employer and employee relationship. The new technologies are also enabling the employees to have considerable flexibility with regard to working hours and also place of work. Working contracts also become shorter and flexible. With the onset of different working environments, the employee value propositions would change. Given the environment of smart automation and digitalization, the employees are expected to create value increasingly in their work. In other words, the organizations increasingly look at the knowledge and skills of employees that will contribute to value creation in the organization.

As new technologies are pervading many aspects of life and work, several of the existing jobs may

become irrelevant or inconsequential in the coming periods. Therefore, the new hires may need new skill sets for both technical jobs and non-technical jobs, while the existing employees need retraining and skill raising programmes so that they can shift to new roles and new assignments. Lifelong learning has become a common feature of adaptation to new technologies. The impact of automation is no longer restricted to junior and middle level as creation of new categories of businesses is leading to senior level jobs being redesigned with rapid adoption of AI, robotics, etc. As the technologies continually evolve at a breakneck pace and every four to five years the competencies of employees will have to change, the employees need to up-skill themselves, innovate and do newer things.

### **Implications of Digital Economy**

A study by Teamlease Services reveals that more than half of generic jobs are facing the risk of disruption over the next two years. It is estimated that 52- 69% of repetitive and predictive roles in sectors such as IT, financial services, manufacturing, transportation, packaging, shipping, etc, will get exposed to the risk of automation in the next couple of years. According to a survey by the All India Management Association (AIMA) and PricewaterhouseCoopers (PwC), the job profiles like data-entry clerk, cashier, financial analyst, telemarketer, customer service executive, manual work operator/executive, factory worker, computer support specialist, market research analyst, retail sales person and advertising sales person will get rapidly disrupted. According to a survey on the Future of Jobs in India by Ernst & Young (EY) and NASSCOM, there will be a change in workforce mix by 2022 due to increased adoption of technologies. It is expected that by 2022, 9% of the workforce will be deployed in new jobs that do not exist today; 37% will be in jobs that have radically changed skill sets; and 54% will fall under the unchanged jobs category. While technology is making inroads at a rapid pace and as new job profiles get created, there is an increasing demand for professionals trained in new skills who can help companies navigate through the transformation.

The World Economic forum has identified 16 skills that are necessary for employees in the 21<sup>st</sup> century. These skills are put into three broad categories, viz. foundational literacies, competencies and character qualities. Although these skills are supposed to be developed in the primary and secondary education, they are relevant even in higher education. The PwC

made a global CEO survey in 2017 and identified problem-solving, adaptability, collaboration, leadership and emotional intelligence as core skills crucial for future jobs.

### **Education Tailored to Transformations in Knowledge Society**

Every country operates in a global setting. A global knowledge economy requires the students to develop the skills that are demanded in an internationally competitive environment. Stakeholders are demanding that higher education provide assurance of quality and that learners are equipped with the competencies needed in the 21<sup>st</sup> century. Students increasingly see educational institutes as the main means of securing their future employment rather than simply learning and self-development. The value proposition for educational institutes is changing. Employability and the student experience are more critical now than ever before. Therefore, higher education system in any country must compete and modernize to meet the broader aspirations of people across the globe.

It is counterproductive to increase number of degree holders without regard to what a degree represents in learning and what opportunities are afforded to an individual based on a degree or credential. The current higher education system in India lacks a mechanism that defines what a degree represents in terms of what a student knows, understands and is able to do. Quality is imperative. A high-quality degree must have well-defined and transparent outcomes which provide clear pathways to further education and employment. Higher education system is undergoing a lot of transformation in advanced economies and India cannot afford to ignore this. For example, 29 European countries entered into an agreement (1999) called the Bologna Process to address the issues facing higher education. It aims at providing students with the knowledge, skills and competences required for the knowledge-based society and economy. It also seeks to create a more seamless higher education system that awards degrees based on clearly defined learning outcomes and commonly accepted assurances of quality. Outcomes based teaching - learning (OBTL) can provide the mechanism for defining what quality means. Such mechanism can also provide the students with clarity as to the pathways through higher education and into the work force. It further aims at assuring students, employers and other stakeholders of the real value addition of a degree. Quality, transparency and

demonstration of measurable outcomes are common features of OBTL. Thus, the Bologna Process is considered to be the most far-reaching and ambitious higher education reform effort ever undertaken in the world.

In earlier periods, pursuing a degree meant going to college every morning to attend the classes with 50 other classmates. Today, it is logging into one's own online course from the comfort of the living room. Students do enjoy the freedom to study from wherever they please. It is a non-traditional study in non-traditional settings (e.g. MOOCs) through non-traditional mediums (mobile learning, video-based lessons, hybrid learning ecosystems, digital textbooks, etc). Massive online open courses are typically referred to as MOOCs. They are online courses that anyone can attend. MOOCs are revolutionary for those seeking improvement upon their existing education. In view of fast pace of technological transformation, lifelong learning has become more relevant. Through flexible learning pathways and a smooth transition between education and work, lifelong learning can ensure continuous opportunities for developing knowledge, skills and competencies. Lifelong learning platforms may provide more flexible access to higher education for underrepresented groups in the society.

Earning a degree was once the sole prerogative of the wealthy. But today with all the grants, aids, student loans, etc., everyone has an opportunity of getting into the colleges that their earlier generations could only dream. At the same time, the students want the best value for the money and time they spend (investment) for their education. They expect the institute to provide them with all the skills that will enhance their prospects of getting a higher return on investment. While leaving the institute, the students should have been equipped with the expertise and graduate attributes needed to achieve their full potential within the global community. Therefore, the educational institutions have the choice to either meet these rising expectations of students or lose out on enrollment.

While digitization is creating changes that higher education must respond to, it can also help education institutes adapt to new education models. Institutions can use advanced analytics and artificial intelligence to come up with new workforce and staffing structures. The educational institutions can also use technology to compete with online education alternatives. They may create a blended

learning experience that uses both classroom and mobile learning. Big data analytics can be used by the educational institutes to provide customized service to the students. Educational institutes can also use data to improve their operations and management.

In response to rapid technological advancement in the world economy, education should evolve at a rapid pace. The technological advances in many sectors of the economy have made the curriculum of many education programs irrelevant or outdated. As the profiles change in the job market requiring new skill-set and new knowledge, the curriculum and pedagogy need continuous updation. The curriculum and pedagogy need to facilitate development of human qualities such as curiosity, empathy, adaptability and emotional agility as they add value to the use of digitalization and smart automation. The traditional book learning is typically linear and students are expected to learn according to rigid curriculum with little concern to their individual needs. In the changing environment, the students need to be provided with adaptive learning system. The more the customization of education, the higher the utility of education. Unique learning experiences tailored to each student provide unrivaled student engagement. Further, the educational institutions need to revisit and revise their vision, mission and objectives periodically to reflect the changing expectations of people in the knowledge-society.

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# FEW OBSERVATIONS ON THE PSYCHO-SOCIO DYNAMICS OF RAPES AND IMPACT IN CONTEMPORARY SOCIETIES

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## Key Words:

Psycho-socio dynamics,  
Rape,  
the Younger generation,  
contemporary society,  
Gender bias,  
Gender issues.

## Abstract

*This research paper made an attempt to explore the psycho-socio dynamics of rapes and impact on the younger generation in contemporary society. The days have gone where everything was hidden behind the screen. Gender inequality, discrimination, injustice and rapes were coming to the light. Media is playing a vital role and showing current affairs of our society and world at large. Everything has become transparent today. It is believed that in modern lifestyle, educated working women including uneducated womenfolk, girls, tiny tots all are safe including the male. But the reality is different. Awareness among women increased. Women all over the world are fighting for their rights and enjoying their equality. Psycho-sociological dynamics of rapes are coming to the limelight through mass media and there is a lot of impact on the younger generation in contemporary society. Susan Brownmiller opined as the act of rape to keep women subordinate to men. Male domination found all over the world. She observed this as "played a critical function. It is nothing more or less than a conscious process of intimidation by which all men keep all women in a state of fear." Understanding the impact of psycho-socio dynamics and impact in contemporary societies is the main objective of the study and area is limited to women in sociological contexts. Secondary sources have been used in the research paper.*

## Introduction

Modern mass media are playing a vital role in our society by showing illegal and unethical acts of our society. They are trying to create awareness among the population, especially feminine gender to be safe from masculine gender who could act adversely in many situations. Male-dominated society still dominating female gender even though there are educated and learned girls and women are working equally to men. The very name female makes them suppress in almost all sectors. But in some cases educated female group are really serving in our contemporary society in the major fields like education, management, health, trade and commerce, small and medium industries from common worker to CEO of a company. In the upper cadre again there are many chances of rapes. Top level officials do not wish to reveal due to the image of that organisation of a reputed company. Women keep their mouth shut and gulp all sort of humiliation and deprive. Our younger generation who are exposing to the modern mass media is learning many lessons from the stories telecasting and publishing in media. Womenfolk are aware and trying to be safe in the work environment as well as in our society.

Both male and female are regularly witnessing such actions of rapes on women. They are analysing cause and effects.

“The definition of discrimination includes gender-based violence, that is, violence that is directed against a woman because she is a woman or that affects women disproportionately. It includes acts that inflict physical, mental or sexual harm or suffering, threats of such acts, coercion and other deprivations of liberty” (CEDAW)

**The objective of the study:** Women are meant for fertility and who is the only reason for the development and continuity of human beings in our societies all over the world. Women are being used by men as any other material and goods. Rape cases are affecting on psycho-socio dynamics in our societies. Identifying reason and impacts in contemporary societies is the main objective of the study.

**Area and Scope of the study:** Area is restricted to the human societies in the sociological contexts. The area of the study is limited to women and their

psycho-socio conditions. The scope of the study extended individual woman to the world at large.

#### **The hypothesis of the study:**

1. Women are often victimised by male-dominated societies.
2. Most of the women do not disclose injustice happened with them.
3. Relatives are the main criminals in many rape cases.
4. The younger generation is being exposed by modern mass media about rapes and other crimes.

#### **Review of literature:**

Vidyalakshmi, CS LLB Legal Research Analyst, 2012 – Sexual Harassment at the workplace the critical analysis of Socio-Legal Scenario – Vaidika Research and Publishing, New Delhi.

In this book, Vidyalakshmi dealt with social aspects of rape cases. She is focussing on sociological aspects. As per constitutional provisions, women's position in national and international level discussed along with gender issues. She also discussed a lot about how to prevent rapes in our society.

Gour's Empowerment of Women in India with Allied Law's & useful Appendices, 2nd Edition – 2003, Law Publishers (India) Pvt Ltd., Allahabad. This book focused on women empowerment and their challenges in male-dominated society.

Mamta Rao – Law relating to Women & Children, 2nd Edition, Reprinted 2011, Eastern Book Company, Lucknow. Being a faculty of law, the writer concentrated on issues related to women and children. A piece of detailed information is there in this book how criminal law applies during criminal and assaults.

Women are the cause of generation. As opined by Ellis, “rape is the male response to social inequality between men and women” According to Russell, “rape is the outcome of a rape-supportive culture. Rape is the ultimate expression of brute majoritarianism which seeks to impose its power on those who are deemed children of a lesser God by virtue of gender, social status or community.” Susan Brownmiller opined as the act of rape to keep women subordinate to men. Male domination found all over the world. She observed this as “played a critical function. It is nothing more or less than a conscious process of intimidation by which all men keep all women in a state of fear.”

According to Kimmel both male and female have

different biological identities. On the basis of appearance, society identifies the genders. The writer observed as, “If sex had solely determined gender, it would not be so. Besides the level of gender inequality also differ from one society to another. This goes to suggest the genesis of gender is in gender inequality itself. Gender difference as a phenomenon is the corollary of gender inequality and not vice-versa. Rape thus is a crime not of sex but of gender. The creation of gender difference and socialization into separate sex roles is not simply a creation of nomenclature but is an exercise in a dispensation of authority. Which gender is the privileged one; which one will dominate; which will be aggressive and powerful are all determined through the notion of difference. And when it comes to a crime of aggression like rape, gender plays a crucial role in the power-politics at work in patriarchy. It vindicates the will of one gender over another; denies space; rights and justice to the other. And finally amounts to a violation of human rights.”

In the amendment of rape laws in 2013, published in the 'Indian National Commission for Women' replaced the word "rape" with "sexual assault". As per Section 375 of the Indian Penal Code, sexual assault means – 2 (a) The introduction (to an extent) by a man of his penis, into the vagina (which term shall include the labia majora), the anus or urethra or mouth of any woman or child. (b) the introduction to any extent by a man of an object or a part of the body (other than the penis) into the vagina (which term shall include the labia majora) or anus or urethra of a woman. (c) the introduction to any extent by a person of an object or a part of the body (other than the penis) into the vagina (which term shall include the labia majora) or anus or urethra of a child. (d) manipulating any part of the body of a child so as to cause penetration of the vagina (which term shall include labia majora) anus or the urethra of the offender by any part of the child's body; In circumstances falling under any of the six following descriptions: Firstly – Against the complainant's will. Secondly – Without the complainant's consent. Thirdly – With the complainant's consent when such consent has been obtained by putting her or any person in whom the complainant is interested, in fear of death or hurt. Fourthly – With the complainant's consent, when the man knows that he is not the husband of such complainant and that the complainant's consent is given because the complainant believes that the offender is another man to whom the complainant is or believes herself to be lawfully married. 3 Fifthly – With the consent of the complainant, when, at the time of giving such

consent, by reason of unsoundness of mind or intoxication or the administration by the offender personally or through another of any stupefying or unwholesome substance, the complainant is unable to understand the nature and consequences of that to which such complainant gives consent. Sixthly – With or without the complainant's consent, when such complainant is under eighteen years of age. Provided that consent shall be a valid defence if the complainant is between sixteen years and eighteen years of age and the accused Person is not more than five years older.

Shashi Deshpande's "The Binding Vine" the novel deals with the incidents of rape on Kalpana by her own relatives. This depicts the act of close relatives and in blood relation, such rapes identified in India. In this novel, these lines depicted the dark side of our culture. "In a minute incident, when Vanaa, Urmila and the kids are watching a film where the heroine is raped by the villain, they debate whether they should allow the kids to watch the film and ultimately give up hoping that the censor board must have taken care of the matter." Shashi Deshpande's concern towards our society and attitude of so-called educated and responsible fellows could be seen in the novel and in our contemporary society.

Robin West in her work on "Narrative, Authority & Law", expressed her views on feelings and deprivation. Women in their life do suck pain a lot. The writer felt that it is necessary to revise and reinforce the right laws which support female rights. Early implementation of such laws is also questionable. Most of the time rape impairs the capacity for personal relationships and, alters the behavioural values generating fear psychosis in the individual. The observation of the Honourable Supreme Court on the rape trial is significant in this regard:

In the Fourth World Conference on Women which held in Beijing (September 1995) The Governments declared that "violence against women constitutes a violation of basic human right and is an obstacle to the achievement of the objectives of equality, development and peace". The United Nations Secretary-General, Boutros Boutros Ghali, opined as "violence against women is a universal problem that must be universally condemned. But he said that the problem continues to grow. The Secretary-General noted that domestic violence alone is on the increase. Studies in 10 countries, he said, have found that between 17 per cent and 38 per cent of women have suffered physical assaults by a partner."

## Conclusion

Contemporary societies are a reflection of our present generation and human culture. Gender bias and educated women are once again questionable in metropolitan cities. Female is always female. Inefficient and suppressed in male-dominated societies. After rapes, women including premature girls are facing psycho-sociological problems. The hypothesis of the study are evaluated in the present study which revealed the truth that male domination, crime by close relatives and modern mass media and their impact on the present generation. Due to the impact of modern media on the younger generation are exposed to the happening and current affairs of our contemporary societies and them under pressure while cultivating moral and ethical aspects. They are really scared about the influences of modern mass media and peer group. Countries like India only can prevent such unethical events in contemporary societies.

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# MODERN ELECTRONIC GADGETS AND ADVANCEMENT OF ICT ARE INCREASING OPPORTUNITIES FOR LIFELONG LEARNING WITH SPECIAL EMPHASIS ON ENGLISH LANGUAGE

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## Key Words:

ICT, Electronic gadgets, Lifelong learning, Mobile Apps, Continuous education, UNESCO.

## Abstract

*This paper tried to depict the role of modern electronic devices and the advancement of ICT creating wonderful opportunities for lifelong learning. Apart from computer and laptops, smart phones are playing a vital role in learning mass. Due to advancement in Information and Communication Technology knowingly or unknowingly learning communities including common men are receiving many more things irrespective of subjects in the form of message and videos. Learners of a particular stream make use of ICT and gather related information on websites and in various mobile applications. Mobile applications and YouTube channels are being used by students for additional information on the subject whereas after completion of a degree and getting an employment educated mass do use smart phones and are active in social media and develop their contacts with Whatsapp, Instagram, Google duo etc. Today's generation is tech savvy. They use smart phones without any difficulty and using one or the other way social media through which they are not only*

*exchanging their ideas but also gaining knowledge related to various subjects. They do develop contacts widen their circle and improve domain knowledge on socio-economic, political, morals, ethics etc. During their leisure, most of the fellows read eBooks, watch television channels and watch YouTube videos through which they learn something which is new. Such a learning process is going on lifelong without any hurdles. In the preamble of "Learning to Be: The World of Education Today and Tomorrow" a clear sentence stated about learning. "If learning involves all of one's life, in the sense of both time-span and diversity, and all of society, including its social and economic as well as its educational resources, then we must go even further than the necessary overhaul of 'educational systems' until we reach the stage of a learning society." (Fauré et al.) Both formal and non-formal education do not cease up until the last breath of a learner. It is lifelong learning. The area of research covered modern electronic gadgets, information and communication technology and lifelong learning. Secondary sources have been used while preparing the research article.*

## Introduction

Information revolution brought drastic changes in the 21<sup>st</sup> century. Life becomes easy and comforts spread all over the world. In education, information technology is playing a vital role and due to ICT teaching-learning activities become effective. Both Sween and Singh opined about lifelong learning as "Lifelong learning is the key to the 21st century. There is an urgent need to provide learning opportunities throughout the lives of men and women to develop their competencies ( But at the same time, students are using so many websites, mobile applications and self-learning devices. Tight opines as, "First, lifelong education is seen as building upon and affecting all existing educational providers, including both schools and institutions of higher education... Second, it extends beyond the formal educational providers to encompass all

agencies, groups and individuals involved in any kind of learning activity... Third, it rests on the belief that individuals are, or can become, self-directing, and that they will see the value in engaging in lifelong education." In these days most of the students addicted to you tubes because information of a particular subject is available in brief and to the point. Experts of the respective subjects are sharing their knowledge through youtube videos. Learning skill and capabilities are limited to the learner how he receives the knowledge and makes use of it. According to Carneiro and Draxler learning amidst the four walls is happening in a formal way. "It presented an education that favours the emergence of the individual talents of each, preparing people for life as citizens, family and community members, and also economic agents "Learning takes place in our lives consciously and unconsciously.

### **The objective of the study**

The main objective of the study is to understand the role of electronic devices and ICT in lifelong learning especially the English language. Further identifying contrast issues while acquiring core language skills i.e. LSRW.

### **The area of the study**

The present study covered modern electronic devices, ICT and lifelong learning in human society.

### **The methodology**

Descriptive and analysis method adopted to interpret the research article using relevant secondary data related to the subject of the research paper.

### **Review of literature**

In order to identify the research area researcher gone through a few reviews of the literature.

Mahajan (2002) considered the lifelong learning and education are the same what we interpret as continuing education. According to him lifelong education results in “purposeful efforts towards self-development carried on by an individual in all the three aspects of his life—his work, personal life and civic life, and is an essential ingredient of continuing education”.

Sharma (1994) studied on continuing education. According to him, such education is based on the educational system. The people who deprived of such educational facilities could get continuing education at any point in their life. It is "... to help maintain, expand and improve individual knowledge, skills (performance) and attitudes and, by so doing, equally meet the improvement and advancement of individuals, professions and organizations".

### **Lifelong learning- the concept of UNESCO**

The concept of lifelong education has been derived from the idea generated by UNESCO during 1970. After understanding the need of education, adult education and continuing education in the third world countries this concept spread all over the world. Faure et al are collectively stated on lifelong learning as "The commission laid stress above all on two fundamental ideas: lifelong education and the learning society. Since studies can no longer constitute a definitive 'whole', handed out to and received by a student before he embarks on adult life, whatever the level of his intellectual equipment and the age at which he does so, educational systems

must be thought out afresh, in their entirety, as must our very conception of them. If all that has to be learned must be continually reinvented and renewed, then teaching becomes education and, more and more, learning. If learning involves all of one's life, in the sense of both time-span and diversity, and all of society, including its social and economic as well as its educational resources, then we must go even further than the necessary overhaul of 'educational systems' until we reach the stage of a learning society. For these are the true proportions of the challenge education will be facing in the future. It is by no means certain that conservatism of a cultural nature will be easier to overcome than economic or political resistance. But once in a position to measure the stakes against the price, how can we refuse to fight the fight? And the weapons we need for that fight are available." It is a known truth that online learning definitely beneficial. According to Ryan, "Learning through virtual environment is becoming increasingly popular especially in the field of language, and more specifically the English language. One of the main reasons for this growth in online learning is an improvement in resources, technology and established effective methods of learning. All these important factors amalgamate to a very practical and convenient option for an English learner. An option that millions of people are now choosing online learning can be implemented in a variety of ways, such as through the use of self-paced independent study units, asynchronous interactive sessions where participants interact at different times or synchronous interactive settings it means where learners meet in real time."

### **Computers and electronic devices**

Computers are making modern life easy and fast. "Computers have been used for computer teaching ever since the 1960s. In the 1960s and 1970s, the first form of computers – Aided Language learning featured language drill and patterns were practiced. It was based on the behaviorist learning model and as such a computer was viewed as little more than a mechanical tutor that never grew tired. Behaviorist CALL was first designed and implemented in the era of the mainframe and best-known tutorial system (Programmed Logic for Automatic Teaching Operation), run on its special hardware. The aim of developing the PLATO system was to demonstrate the technical facility and the economic viability of an extensive computer-based educational network. It was mainly used for extensive drills, explicit grammar instruction and translation tests." (Chapelle)

### **Mobile applications and their usage among the younger generation**

Students are almost depended on mobile applications and websites and losing their original thinking capacity. Creativity is visible only in WhatsApp messages. Educationists and parents should intervene in order to convince to use electronic devices only for the sake of learning where they are lagging. Students must aware are making use of such device and apps for educational purposes. Computers, the internet, mobile applications, social media and other electronic devices are part and parcel of human life today. But one should know how to use them for the betterment. Language skills can be acquired easily if students are aware of the usage of these devices and applications.

### **ICT and online learning**

Zhang D. and Nunamaker both supported computer aided online learning. "Online learning creates an opportunity for global access to education because the students can do their course from any one of the education providers worldwide without leaving their country, even without leaving the house. In early days people utilized flights and ships to travel to different parts of the globe to seek knowledge but today ICT can be used to seek knowledge from a university situated far away from the student's location. Not only will current occupation of the students not allow them to travel to seek knowledge but also the commitments they have with the family and the workplace. Online learning enhances the learning and teaching process so that the stakeholders of education find more opportunities such as lifelong learning regardless of learner's age, location, current occupation and time". Students can gain knowledge on a subject including English language and literature. But it is quite difficult to cultivate core language skills like LSRW i.e. listening, speaking, reading and writing. With the help of various websites and mobile application, students acquire reading and listening skills but lagging in speaking and writing skills. Students are expert in texting, browsing and active in social networks. They are gaining knowledge all day. Useful and junked information is flowing among young minds wasting a lot of valuable time and energy.

### **Computer-Aided Language Learning**

Both Kenning and Kenning opined about computer-aided language learning as. "The Final stage of Computer-Aided Language Learning is known as Integrative CALL. Communicative CALL was

criticized for using the computer in an ad hoc and disconnected fashion and using the computer made a greater contribution to marginal rather than central elements of language learning." Further, both experts stressed the role of teachers. "Teachers have moved away from a cognitive view of communicative language teaching to a socio-cognitive view that emphasizes real language use in a meaningful, authentic context. Integrative CALL seeks both to integrate the various skills of language learning (LSRW) and to integrate technology in full extent of language teaching that's why multimedia network computers provide a range of informational, communicative and publishing tools that are potentially available to each learner".

### **Skills of using smart phones and outcome-based education**

Students are easily acquiring mobile skills but rarely core language skills. It is believed that whatever is available on the internet is right and apt. One should think over it. Apart from this creativity, divergent thinking, critical thinking and analysis, application of original thinking is being curbed by advanced technology. Everything is available but we have to sieve and absorb the cream which is useful for the sake of our education. Before referring secondary sources learning community must be aware of learning in classrooms with interactive sessions. Due to outcome-based education (OBE) system where there is a prominent role of the computer is feeding learners as much as possible and preparing them to refer addition information on websites and mobile applications. Here teaching team is also responsible to create interest in their subjects using ICT. Moreover, if students are referring secondary sources there must be knowledge follow prepared by the same teachers. Teachers are also becoming resourceful with these electronic devices and mobile applications.

### **Conclusion**

No doubt computer-aided language learning is supporting learners to learn subjects as well as languages. The advanced electronic gadgets as well as information and communication technology increasing lifelong learning opportunities. The SWAYAM portal of MHRD has been providing quality education free of cost. Anyone can get the benefit of the facilities. Moreover, there is no age limit to learn. Learners could choose any subject to enhance their knowledge. But students are failing to acquire core language skills. Partial skills making them paralyzed and with little knowledge, they are

trying a lot to compete in the present competitive world. Treasure is on the palm but they have to search and absorb. Teachers are also responsible for this. Core skills (LSRW) are acquired under the guidance of the teaching team. Students should refrain to unwanted sites which are distracting their education and diverting to reach their destination. Moral and ethical issues are questioned on education platforms. Educationalists are trying to find out a solution and teaching strategies. In higher education teaching team must have ethics. Moral aspects are often questioned during one or the other embarrassing situation in India. Teachers must be computer savvy. Technological advancements are inevitable in the education system. Apt and wise use of these technologies would create wonders in language learning and acquiring core skills. Learning any subject or languages in human life continues up till last breath. Let us recall the saying that learning process covers 'Womb to tomb'.

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