

Perception of English Language Teachers towards use of ICT for Teaching English: an Empirical Study

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***Abstract:** The objective of the present paper is to find out the perception of the teachers of English Language towards the use of ICT for teaching English. The study was conducted using structured questionnaire on a group of teachers selected randomly from the state of Bihar in India. It was found that teachers have a favorable perception towards the use of ICT for teaching English language. There are three factors that affect the perception of English language teachers towards use of ICT are effective implementation of ICT infrastructure in schools, ensuring effective use of available ICT infrastructure in schools, channelizing resources for ICT implementation. It was also found that none of the demographic variables have impact on the perception of English Language Teachers towards use of ICT.*

***Keywords:** Information and Communication Technology (ICT), English Language Teaching (ELT), Perception*

1. Introduction

In the present era of technological world, it is very important for people to get acquainted with the technological facilities to lead a hassle free life. Technology is being used in every aspect of life and it is almost impossible to imagine our lives without technology. Technology includes techniques, skills, methods and processes used in the production of goods, services and in the accomplishment of objectives. It can be embedded in machines, computers or devices which are operated by individuals in their day to day life.

The application of computers and internet to store, retrieve, transmit, and manipulate data is known as Information technology (IT) (Murray, 2011). ICT is related to technologies that facilitate the transfer of information and various types of electronically mediated communications. It is an extended term for information technology (IT). It stresses the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software,

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middleware, storage, and audio-visual systems, which enable users to access, store, transmit, and manipulate information (Zuppo, 2012).

ICTs are those technologies which enable societies to create, collect, to communicate, manage and process information in multimedia and various digital formats for different purposes by using telecommunication techniques. ICT plays an important role to develop the system of communication. It has decreased time, distance and made the world closure to us. ICT finds significant role in enhancing pedagogical techniques used by teachers.

1.1 ICT in education

ICT is playing a significant role in the teaching learning process. Patra (2014) has identified various benefits of ICT in secondary school teaching-learning process such as greater learner autonomy, tailoring task to suit individual skills, demonstrating students' achievement in ways which might not be possible with traditional methods, unlocking hidden potential for those with communication difficulties, new ways for teaching the same things, focus on each and every child, learner style and preferences, a tool in the armoring of tackling barriers to engagement, reducing beaurocratic burdens on teachers, and many more.

Thus, it is evident that ICT has significant role in the teaching-learning process. It has affected all the areas covered by the teaching-learning process such as the classroom, the materials used in classroom, for motivating the learners, for the professional growth of teachers, for enhancing the overall quality of teaching-learning process. However, there are certain challenges as well as barriers in the implementation of ICT. Some of the barriers such as lack of teacher's competency to handle ICT equipment's, lack of infrastructures and equipment's, lack of interest in teachers and learners, high cost of ICT devices, insufficient power supply especially in the rural areas, fear regarding the mis-utilisation of ICT facilities by students are worth mentioning.

These limitations and barriers need to be overcome in order to use it efficiently and effectively.

1.2 Brief history of using ICT facilities in education

In India, use of ICT in education started in 1923. It is airing of its first radio broadcast in June 1923 by Radio Club of Mumbai. In 1937, All India Radio (AIR) started broadcasting educational programs for school children. In 1959, India acquired its first television set for an experimental television service in Delhi. In 1961 Educational Television (ETV) was introduced in the secondary schools in Delhi. In 2000, a 24-hour educational channel was launched known as DD-Gyan Darshan. Since 2002, India's first educational radio station called Gyan Vani (Voice of Knowledge) has been on the air. In 2003, in collaboration with Indira Gandhi National Open University (IGNOU) and Indian

Institute of Technology (IIT), a technology education channel was launched targeting to 1.5 million engineering and technology students. In India, use of computers related to education was first started in 1984. The project was called Computer Literacy and Studies in School (CLASS). To facilitate the computer based education, the first degree in computer education was offered in 1989 in Indore, India.

1.3 ICT in teaching English language

It is believed that English language can be effectively taught using ICT. ICT is increasingly used in teaching and learning ELT all over the world. Teaching of foreign language especially English in India is expected to be made more effective with the use of ICT. Sharndama (2013) has examined the role of ICT in facilitating teaching and learning of English in Large classes and found that it is indeed very effective. Isisag (2014) has highlighted the positive effects of integrating ICT in teaching foreign language including English. Njamanze (2010) examined the role of ICT in teaching of English in Nigeria. Therefore, it can be inferred that use of ICT can make English Language Teaching [ELT] more effective and efficient.

Rest of the paper is organised as follows: section 2 deals with the need and significance of the study, section 3 consists of statement of the problem, section 4 deals with the Operational definitions, section 5 presents the review of literature, section 6 consists of objective of study, section 7 is about research questions, section 8 includes hypotheses of study, section 9 consists of research methodology, section 10 is about analysis and findings and section 11 deals with conclusion and policy implications

2. Need and significance of study

All the educational planning commissions and committees have recommended about using and blending of technology with education. It is worth mentioning that National curriculum framework (NCF) 2005, (p 121) has laid significant emphasis on the implementation and use of ICT in teaching learning process. The National curriculum framework for teacher education (NCFTE) 2009, has also mentioned about giving training to the teachers so that ICT can be used effectively in the teaching-learning process so that this process can be more sustainable.

Many policies and programmes had been implemented for the implementation and making use of ICT facilities in the schools, (both private school and government school). Ministry of human resource development (MHRD) under Government of India releases huge fund every year for the implantation and maintenance of ICT facilities in the schools. It is the teachers of the school who are ultimately going to use these facilities and they are the important medium for the effective and efficient use of ICT facilities.

2.1 Reason for choosing English teachers

Language education is an area where ICT is increasingly used to give learners access to information, promote interaction and communication, and enhance digital literacy skills. In order to optimise the benefits of ICT in language teaching, it is crucial that it is used in a pedagogically sound way that corresponds to the individual needs of the learners. In a study conducted at Norway, it was found that teachers are the biggest bottleneck in integrating ICT in teaching foreign language including English (ITU, 2009).

Hartoyo (2008) states that English language teaching has been shaped by the search for the 'one best method' of teaching the language. The latest method for teaching English is emerging as use of ICT in classroom for imparting English education. Some experts and practitioners of education strongly supports the utilization of ICT in language learning to improve efficiency and effectiveness of learning that can improve the quality of understanding and mastery of the language studied. In other words, the integration of ICT in the field of language learning is inevitable known that the ICT and language learning are two aspects which support each other like two sides of the coin inseparable (Hartoyo, 2010).

English is one of difficult lessons since it is a foreign language and teacher must create interactive teaching and learning to make students interest.

In this purview it is worth studying the perception of the teachers of English language towards use of ICT in their schools. Use of ICT in schools depends upon the perception of its stakeholders and one very significant stakeholder are the teachers and extracting its intended benefits depends to a large extent on the participation of teachers in learning process with the help of ICT. Edmunds, Thorpe & Conole. (2012) found that positive perception towards ICT influences its further use. Keller & Cernerud (2002) found that strategy of implementing ICT affect perceptions.

Therefore, it is important to study the perception of English language teachers towards use of ICT in classrooms.

3. Statement of the problem

From the above discussions it can be said that ICT is an inevitable part of teaching-learning process and this is true for teaching English language as well. Blending of technology with the education process can only be done with implementation of ICT facilities.

The teachers are the important link for implementing ICT facilities in schools. ITU (2009) revealed that teachers are the biggest bottleneck in the implementation of ICT facilities in classroom especially for language classroom. It is important to know their perception towards the uses of ICT facilities. The use of ICT for teaching English

depends upon the perception of the teachers towards use of ICT and their familiarity with the different ICT tools and techniques. It also requires the availability and accessibility of the ICT tools to the teachers which is expected to be provided by the school authorities. The teacher must be adequately prepared to make use of ICT. In the 21st century, technologies are truly communicative and interactive but the implementation is low in the language classroom. The use of ICT depends upon perception of the teachers towards ICT, his/her training to use ICT and available infrastructure for use of ICT.

Positive perception of English language teacher towards use of ICT is expected to increase its use. Therefore it is considered worthy to study the perception of the English language teachers towards use of ICT for ELT.

4. Operational definition

The operations definitions of some of the terms used in this study is given herewith:

i. ICT

ICT in this present study includes facilities such as Computer, internet, LCD projection system, Overhead Projection system, Radio, TV, video-conferencing, teleconferencing Mobile phones etc. used for enriching teaching-learning process, available in the secondary schools of Bihar.

ii. English Language Teachers

In this study, English Language Teachers [ELT] are the teachers engaged in the teaching of English language as one of the paper at the secondary level in the schools funded by the Government of Bihar.

iii. Perception of English language teachers towards ICT

Perception of English language teachers towards ICT means way of looking at the different aspects of ICT by the English language teachers including its benefits, harmful effects, way of operating and other related aspects.

5. Review of literature

Edmunds, Thorpe & Conole (2012) found that usefulness and ease of use of ICT are key dimensions of students' attitudes towards technology. Edmunds, Thorpe & Conole (2012) further found that ICT is perceived most positively in the context of work and technology use at work is an important driver for technology use in other areas. Keller & Cernerud (2002) concluded that the strategy of implementing ICT facilities at the university was more important in influencing students' perceptions than the individual background variables. Students did not regard access to e-learning on campus as a benefit. Male students, students with previous knowledge of computers and students with positive attitudes to new technologies were all less positive to e-learning on campus than

other students. Loveless (2003) highlighted the teachers' perceptions of ICT as a social and cultural phenomenon, as an ambiguous area constructed as a discrete subject, curriculum resource and higher-order capability, and as a 'new' field in primary schools. Adeyinka, Adedeji, Majekodunmi, Adika, Adewuyi, & Adeyinka, (2007) showed that teachers perceived ICT as being easier and very useful in teaching and learning. Emphasis must be placed on the pedagogy behind the use of ICTs for teaching/learning.

Raval (2014) has made an overview of different kinds of ICT technological devices that a teacher can use and make the teaching process innovative and informative. Viatonu and Kayode (2014) have emphasized the use of ICT for ELT. They also highlighted various issues related to the use of ICT for ELT. Sharndama (2013) has examined the role of information and communication technologies in facilitating teaching and learning of English in Large classes. Isisag (2014) has highlighted the positive effects of integrating ICT in teaching foreign language including English. Njamanze (2010), examined English as a global language, the place of ICT in Nigeria and the various technological applications and programs used in carrying out this growth, and development of English Language teaching/learning in Nigeria. Njamanze (2010), reaffirmed the need for increased digital access and awareness in Nigeria. Padurean and Margan (2009) has listed and detailed on the roles of the computer in class as well as on the advantages of the use of ICT. Aremu (2014) revealed that ICT usage in Nigerian education is reducing illiteracy and poverty and is also improving the nation's technology. Singh and Bhowal (2010) have found that there is gap in the expectation of employees for getting investment related education from their employer and their actual experience of getting it. Bharadwaj (2007) found that due to increased availability of ICT infrastructure in private schools, ICT is becoming popular in private schools in India. Light (2009) revealed that ICT is becoming very essential element for effective teaching in schools. National Curriculum Framework (2005) also emphasized the use of ICT in school for effective teaching learning process.

The importance of the use of ICT in teaching learning process can be evidenced from the above reviewed literature. It is important to understand the role of ICT in the educational process at all the levels. The literature shows that with the enhanced role of ICT, facilitating teaching learning process will be easier.

It can be concluded that so far as the researcher reviewed the related literature there is little study done on perception of English language teachers towards use of ICT in secondary schools of Bihar. Based on the above background and gap areas, the present study bridge the gap to the existing literature to find out perception of English language teachers towards use of ICT for teaching English in classroom.

6. Objective of study

The objective of the present study are given below:

- i. To find out the perception of English language teachers of secondary schools of Bihar towards use of ICT for English language teaching;
- ii. To diagnose the factors affecting the perception of English language teachers of secondary schools of Bihar towards use of ICT for English language teaching;
- iii. To investigate the impact of demographic and other select socio-economic variables on perception of English language teachers of secondary schools of Bihar towards use of ICT for English language teaching.

7. Research Questions

The study attempts to answer the following research questions:

- a. What is the overall perception of the English language teachers of secondary schools of Bihar towards the use of ICT for English language teaching?
- b. What are the factors that affect the perception of English language teachers of secondary schools of Bihar towards use of ICT for English language teaching?

8. Hypotheses of study

The study tests the following null hypotheses:

- a. There is no significant impact of 'gender' on 'perception of the English language teachers of secondary schools of Bihar towards the use of ICT for English language teaching';
- b. There is no significant impact of 'Nature of appointment' on 'perception of the English language teachers of secondary schools of Bihar towards the use of ICT for English language teaching';
- c. There is no significant impact of 'having an email id' on 'perception of the English language teachers of secondary schools of Bihar towards the use of ICT for English language teaching';
- d. There is no significant impact of 'age' on 'perception of the English language teachers of secondary schools of Bihar towards the use of ICT for English language teaching';

9. Research Methodology

This study covers the all types [permanent as well as Niyojit] English language teachers of secondary schools of Bihar. This research is analytical and empirical in nature. The study was conducted using the following research methodology:

a) Universe of study

The universe of the study consists of all the English language teachers in the secondary schools of Bihar. There are approximately 3,500 such teachers in Bihar.

b) Sampling unit and sample size

Using a random sampling design from a population of 3500 English language teachers of secondary schools of Bihar at 95% confidence level and 5% confidence interval, a sample of 352 such teachers was obtained. English language teacher in the schools of secondary of Bihar is the sampling unit.

c) Profile of respondents

Table 1: Gender of respondents

Gender	Frequency	Percent
Male	232	65.9
Female	120	34.1
Total	352	100.0

Source: Compiled from Questionnaire

Table 2: Nature of appointment

	Frequency	Percent
Regular appointment	130	36.9
Niyojit appointment	189	53.7
Not disclosed	33	9.4
Total	352	100.0

Source: Compiled from Questionnaire

Table 3: Age of the respondents

	Frequency	Percent
20-30 Years	74	21.0
30-40 Years	176	50.0
40-50 Years	54	15.3
50 Years and above	48	13.6
Total	352	100.0

Source: Compiled from Questionnaire

Table 4: Having email-Id of the respondent

	Frequency	Percent
Not having email-id	224	63.6
Having email-id	128	36.4
Total	352	100.0

Source: Compiled from Questionnaire

d) Data collection

The study was based on primary data and a tool of “questionnaire” was used to collect the necessary information. For secondary data, official reports, records, Journals, etc. were consulted.

e) Development of questionnaire

Perception of English language teachers towards use of ICT for teaching English is considered as latent variable in the study. To measure this latent variable, 18 items were considered. These 18 items were chosen by consulting various studies such as Edmunds, Thorpe & Conole (2012); Loveless (2003); Adeyinka, et al., (2007); Sharndama (2013); Padurean and Margan (2009). Apart from this, experts’ opinions and results of pilot surveys were also considered in framing the 18 items of questionnaire. The items were as follows:

- Item 1 was related to simplicity of using ICT for teaching English
- Item 2 was related to scope of using ICT for teaching English
- Item 3 was related to availability of sufficient ICT infrastructure at school
- Item 4 was related to essentiality of ICT for teaching English
- Item 5 was related to easiness of teaching English with the use of ICT
- Item 6 was related to requirement of training/coaching to use ICT in class
- Item 7 was related to wastage of time in the name of ICT for teaching English
- Item 8 was related to wastage of money for implementation of ICT for teaching English
- Item 9 was related to use of ICT by the students more for playing then studying
- Item 10 was related to scope of committing unintentional error
- Item 11 was related to difficulty of monitoring the proper use of ICT
- Item 12 was related to use of ICT for watching adult content by the students
- Item 13 was related to saving of time due to use of ICT for teaching English
- Item 14 was related to cost benefit of ICT implementation
- Item 15 was related to maintenance of log book for use of ICT
- Item 16 was related to unavailability of power to use ICT
- Item 17 was related to enhancement of effectiveness of teaching English due to use of ICT
- Item 18 was related to promoting indiscipline among students due to use of ICT

For measuring perception of English language teachers towards use of ICT for teaching English, the response to the above-mentioned items were obtained on a five point scale ranging from 5 to 1, where 5 denotes a very favourable perception towards use of ICT for teaching English and 1 denotes a very unfavourable perception towards use of ICT for teaching English. Some of the items were on reverse scaling to ensure accuracy of responses. Some other information were also sought from the respondents like age, gender, email ids, nature of appointment etc.

f) Administration of questionnaire

A list of 3, 500 English language teachers was obtained on September 2015. Out of these, 410 such teachers were identified by using a random number table at 95% confidence level and a 5% confidence interval. Then the questionnaire was distributed among these 410 teachers. Out of this, 360 completed questionnaire were returned. After scrutinising the 360 completed questionnaire, 8 questionnaires were found to defective and incomplete in some respect and therefore, these 8 questionnaires were rejected. Thus, 352 questionnaires were considered finally.

g) Data analysis

To analyse the data statistical tools such as mean, standard deviation etc. were used. The reliability of tool was assessed by Cronbach's Alpha which measures internal consistency of the items. Factor analysis was used for data reduction. This is a statistical tool concerned with the reduction and summarisation of observed variables in terms of common underlying dimensions or factors (Hair, Anderson, Tatham & Black, 2003). Multiple regression analysis is used to find out the impact of select variables on dependent variable.

10. Analysis and Findings

The analysis and findings of this study are presented in the following paragraphs:

10.1 Reliability of the tool

Table 5: Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.719	.722	18

Source: Compiled from Questionnaire

A scale was constructed to measure the perception of the English language teachers towards use of ICT for teaching English. The scale consists of 18 items. The reliability of scale was tested using Cronbach's Alpha. The value of Cronbach's Alpha is found to be 0.719 which is indicative of high degree of reliability. Value of Cronbach's Alpha of more than 0.70 is considered to be highly reliable (Nunnaly, 1978). A high value of

Cronbach's Alpha is also an indication that the items considered to measure the latent variable, i.e., Perception of English Language teachers towards the use of ICT for teaching English, are actually measuring the latent variable.

10.2 Measuring perception of English language teachers towards use of ICT for teaching English

The two basic statistics (mean and standard deviation) for measuring perception of English language teachers towards use of ICT for teaching English with respect to the various items considered for the study is presented in Table 6.

Table 6: Item Statistics

	Mean	Std. Deviation
Availability of sufficient ICT infrastructure	2.5	1.129
Unavailability of power supply for using ICT facilities	2.55	1.249
Use of ICT for watching adult content by the learners	2.76	1.066
Scope of committing unintentional error while using ICT	3.01	1.043
Use of ICT more for playing than for studying	3.16	1.165
Difficulties in monitoring the proper use of ICT	3.22	0.994
Cost of implementing ICT with respect to its benefits	3.36	1.100
Wastage of money by implementing ICT for teaching English	3.48	1.490
Maintenance of log book for using ICT	3.49	1.072
Scope of using ICT for teaching English	3.74	1.056
Indiscipline among students due to use of ICT	3.79	1.203
Use of ICT saves time in teaching English	3.86	0.980
Enhancement of effectiveness of teaching English by using ICT	3.88	1.152
Essentialities of ICT for teaching English	4.08	1.136
Requirement of training to use ICT for teaching English	4.10	0.915
Simplicity of using ICT for teaching English	4.21	0.740
Wastage of time by using ICT for teaching English	4.28	0.908
ICT for easiness of teaching English	4.38	0.806

Source: Compiled from Questionnaire

It is evident from Table 6, the top items contributing to the favourable perception of English language teachers towards use of IT for teaching English are identified as 'ICT for easiness of teaching English', 'Wastage of time by using ICT for teaching English', and 'Simplicity of using ICT for teaching English'. Whereas items like 'Availability of sufficient ICT infrastructure', 'Unavailability of power supply for using ICT facilities',

'Use of ICT for watching adult content by the learners' have least impact in building favourable overall perception of English language teachers towards use of ICT for teaching English.

10.3 Scale statistics

Table 7: Scale Statistics

Mean	Variance	Std. Deviation
63.8391	65.496	8.09294

Source: Compiled from Questionnaire

Table 7 presents the scale statistics. The scale constructed for the study consists of 18 items. The respondents were asked to give their opinion on a scale of 5 and accordingly score is assigned to their responses. Scores of 5,4,3,2 and 1 are assigned to responses as 'strongly agree', 'agree', 'moderately agree', 'disagree' and 'strongly disagree' respectively. Thus, maximum score possible for a respondent is 90 [18X5] and minimum score possible for a respondent is 18 [18X1]. The difference of maximum possible score (90) and minimum possible score (18) is 72 (90-18). This difference is divided by five (Since it is a five point scale) which comes out to be 14.4. This 14.4 is added to 18 (lowest possible score) and the resultant figure is 32.4. This gives the first interval score of 18 – 32.4 which represents 'very unfavourable perception towards use of ICT'. Similarly by adding 14.4 to the upper limit of the previous class interval, subsequent values are obtained and an interpretation table is prepared which is given in the exhibit 1.

Exhibit 1: Interpretation table

Sl. No.	Perception Score	Interpretation
1	18 – 32.4	Very unfavourable perception towards use of ICT
2	32.4 – 46.8	Unfavourable perception towards use of ICT
3	46.8 – 61.2	Moderate perception towards use of ICT
4	61.2 – 75.6	Favourable perception towards use of ICT
5	75.6 – 90	Very favourable perception towards use of ICT

Mean value of the scale as per table 7 is 63.8391. It falls within the class interval of 61.2 – 75.6 which shows favourable perception towards use of ICT as per exhibit 1. Thus, it can be inferred that teachers of English language in the secondary schools of Bihar have favourable perception towards use of ICT for teaching English.

10.4 Factors affecting the perception of English language teachers towards use of ICT

Factor analysis has been performed to identify the factors affecting the perception of English language teachers towards use of ICT for teaching English. Before performing

factor analysis, it is required to test the adequacy of samples taken for the study. It has been tested by performing KMO and Bartlett Test of sampling adequacy.

Table 8: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.674
Bartlett's Test of Sphericity	Approx. Chi-Square	1171.922
	Df	153
	Sig.	.000

Source: Compiled from Questionnaire

Table 8 presents the result of KMO test and Bartlett Test for sampling adequacy. Value of KMO measure of sampling adequacy is 0.674. Any value of more than 0.50 gives an indication that the sample considered for the study is adequate. Bartlett measures test null hypothesis that original correlation matrix is an identical that means all correlation coefficients are zero. In order to proceed factor analysis, it is needed some relation among the variables. In the table 8, it is seen that Bartlett test is highly significant as p value is less than 0.05 (5% level of significance) which indicates factor analysis is appropriate.

Table 9: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.340	18.558	18.558	3.340	18.558	18.558	2.032	11.289	11.289
2	2.291	12.725	31.283	2.291	12.725	31.283	1.952	10.846	22.135
3	1.476	8.201	39.485	1.476	8.201	39.485	1.922	10.675	32.810
4	1.168	6.489	45.973	1.168	6.489	45.973	1.571	8.729	41.539
5	1.137	6.316	52.289	1.137	6.316	52.289	1.552	8.623	50.162
6	1.098	6.098	58.387	1.098	6.098	58.387	1.481	8.226	58.387
7	.963	5.349	63.737						
8	.858	4.767	68.504						
9	.786	4.366	72.870						
10	.740	4.110	76.980						
11	.681	3.783	80.763						
12	.630	3.501	84.264						
13	.609	3.385	87.649						
14	.566	3.145	90.794						
15	.513	2.852	93.646						
16	.467	2.596	96.242						
17	.366	2.036	98.277						
18	.310	1.723	100.000						

Extraction Method: Principal Component Analysis.

Source: Compiled from Questionnaire

From table 9, it is evident that all the 18 items can be grouped under six groups to measure the perception of English language teachers towards use of ICT for teaching English since Eigenvalues for the first six groups are more than one. It is also seen that all these six group of variables could explain 58.38% of the variations in the overall perception of teachers towards use of ICT.

Table 10: Component Matrix

Item		Component					
		1	2	3	4	5	6
1	Essentialities of ICT for teaching English	.610	.019	.075	-.023	-.157	-.198
2	Wastage of money by implementing ICT for teaching English	.577	-.131	-.103	.331	-.408	-.042
3	Use of ICT for watching adult content by the learners	.533	-.298	-.013	-.159	.117	-.201
4	Wastage of time by using ICT for teaching English	.531	-.093	-.412	.204	-.192	-.246
5	ICT for easiness of teaching English	.500	.072	-.064	.324	.387	.321
6	Enhancement of effectiveness of teaching English by using ICT	.497	.121	-.068	.020	-.334	.274
7	Scope of using ICT for teaching English	.458	.271	.411	-.102	.240	-.261
8	Scope of committing unintentional error while using ICT	.428	-.301	.414	-.324	.014	-.182
9	Simplicity of using ICT for teaching English	.288	.636	.151	-.230	.226	.111
10	Maintenance of log book for using ICT	.177	.555	-.128	-.326	-.331	-.062
11	Use of ICT saves time in teaching English	.385	.526	-.332	-.091	-.078	.357
12	Requirement of training to use ICT for teaching English	.320	.520	-.120	.147	.084	-.378
13	Difficulties in monitoring the proper use of ICT	.352	-.500	.307	-.021	-.349	.315
14	Availability of sufficient ICT infrastructure	.156	.455	.293	.414	.101	.078
15	Unavailability of power supply for using ICT facilities	.358	-.064	.574	.258	-.020	-.057
16	Use of ICT more for playing than for studying	.296	-.400	-.416	.284	.384	-.167
17	Indiscipline among students due to use of ICT	.482	-.231	-.307	-.489	.168	-.080
18	Cost of implementing ICT with respect to its benefits	.467	-.240	-.007	-.154	.307	.497
Extraction Method: Principal Component Analysis.							
a. 6 components extracted.							

Source: Compiled from Questionnaire

From table 10, the following factors can be identified that affect the perception of English language teachers towards use of ICT for teaching which is grouped and presented in table 11.

Table 11: Factors affecting perception of English language teachers towards use of ICT for teaching

Factors	Items		Name of factors
Factor 1	1	Essentialities of ICT for teaching English	Effective implementation of ICT infrastructure in schools
	2	Wastage of money by implementing ICT for teaching English	
	3	Use of ICT for watching adult content by the learners	
	4	Wastage of time by using ICT for teaching English	
	5	ICT for easiness of teaching English	
	6	Enhancement of effectiveness of teaching English by using ICT	
	7	Scope of using ICT for teaching English	
	8	Scope of committing unintentional error while using ICT	
Factor 2	9	Simplicity of using ICT for teaching English	Ensuring effective use of available ICT infrastructure in schools
	10	Maintenance of log book for using ICT	
	11	Use of ICT saves time in teaching English	
	12	Requirement of training to use ICT for teaching English	
	13	Difficulties in monitoring the proper use of ICT	
	14	Availability of sufficient ICT infrastructure	
Factor 3	15	Unavailability of power supply for using ICT facilities	Channelizing resources for ICT implementation
	16	Use of ICT more for playing than for studying	

Source: Compiled from Questionnaire

After having a look at the individual cell values in table 10, only three factors were clearly identified. Factor four and six consist of only one item and correlation coefficient is also less than 0.50. In this situation it is not expected to provide a good result. Thus, the three factors that affect the perception of English language teachers towards use of ICT is:

- a) Effective implementation of ICT infrastructure in schools,
- b) Ensuring effective use of available ICT infrastructure in schools,
- c) Channelizing resources for ICT implementation.

10.5 Impact of gender, age, having email id and nature of appointment on overall perception of English language teachers towards use of ICT for teaching English

Table 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.161 ^a	.026	.015	7.91429	.026	2.319	4	347	.057
a. Predictors: (Constant), Age, Gender, Nature of appointment, Email-Id									
b. Dependent Variable: Total perception score									

Source: Compiled from Questionnaire

Table 12 shows the value of R square as 0.026 which is not considered as good fit. Predictors are explaining only 2.6%. Unexplained variables are high. Since the p-value is 0.057 which is more than 0.05 (5% level of significance), the relationship between dependent and independent variable is not linear. However, it is less than 0.06% (6% level of significance), it can be assumed that the relationship between the dependent variable and independent variable is linear.

Table 13: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	77.666	1.453		53.457	.000		
	Gender	.381	.893	.023	.427	.670	.992	1.008
	Nature of appointment	-1.772	.684	-.138	-2.592	.010	.984	1.017
	Email-Id	.996	.911	.060	1.093	.275	.927	1.078
	Age	-.405	.476	-.047	-.851	.395	.911	1.097
a. Dependent Variable: Total perception score								

Source: Compiled from Questionnaire

Out of four hypotheses mentioned in section 8, only one null hypothesis of 8b is rejected at 5% level of significant as p value is less than 0.05. So, it can be concluded only nature of appointment is having influence on the perception of English language teachers towards use of ICT for teaching. Others variables are highly insignificant according to the p value. Gender, email-id, Age groups are not at all influencing the perception of English language teachers towards use of ICT for teaching. It should further study to identify variables apart from nature of appointment which have impact on perception of English language teachers towards use of ICT for teaching which in turn increase R-square.

11. Conclusion and policy implications

It can be concluded from the above discussion that the perception of English language teachers of secondary schools of Bihar towards use of ICT for teaching English is highly favourable. This is indeed a positive sign for implementing ICT infrastructure at the secondary schools of Bihar. However, there is still scope to improve their perception to make it very highly favourable. Gebremedhin & Fenta (2015); Kurga, S. J. (2014) have also arrived at the similar findings.

ICT for easiness of teaching English, saving of time by using ICT for teaching English and simplicity of using ICT for teaching English are some of the items which have relatively higher influence in building favourable perception towards use of ICT for teaching English by English language teachers. Thus, it is seen that ICT is acting as a facilitator in improving their teaching. Teachers did not use ICT to radically change their pedagogical practices, but rather to sustain their traditional practices (Mwalongo, 2011). On the other hand, non-availability of sufficient ICT infrastructure, sufficient power and use of ICT to watch adult content by learners are some of the factors which are causing serious challenge in the way of implementation of ICT for teaching. Ang'ondi (2013); Gebremedhin & Fenta (2015) are also of the same view.

There are three factors that affect the overall perception of English language teachers of secondary schools of Bihar towards use of ICT for teaching English are effective implementation of ICT infrastructure in schools, ensuring effective use of available ICT infrastructure in schools and channelizing resources for ICT implementation. Thus, it is need of the time to pay more attention to the way ICT has been implemented and how to achieve effective ICT implementation. Al harbi (2014) indicates that ICT implementation should address to fulfil the need of students, teachers and schools and not with the provision of technology. Effective ICT implementation requires using ICTs as knowledge construction tools rather than instructional tools. Ndawi, Thomas & Nyaruwata (2013) were also of the similar findings. Thus, there is a need to frame a suitable ICT policy (Murithi, Gitonga & Kimanthi, 2013) and ICT strategy (Almalki & Williams, 2012) by the Government for its proper implementation.

It is also found that there is no impact of age, gender, having an email id on the overall perception of English language teachers towards use of ICT for teaching English. However, nature of appointment have some impact on the overall perception of English language teachers towards use of ICT for teaching English. Jegede (2009) also found that age is not having any impact on perception towards ICT. However, findings of Padmavathi (2013) is contradicting this finding where it was found that age and gender have significant impact on perception of teachers.

Therefore, the policy makers should frame policies regarding implementation of ICT infrastructure irrespective of these variables. It was seen that to a large extent, schools have been relying on government aid and initiative to equip schools with ICT infrastructure, but in order to realise the benefits of ICT, there is a need to exhibit some kind of leadership skill so that ICT implementation can be taken as priority in the schools and this will promote its implementation (Mingaine, 2013b).

11.1 Suggestions

- a) Government should make available ICT infrastructure in all the schools at the earliest;
- b) Adequate supply of power must be ensured in all the schools of Bihar funded by state Government (Mingaine, 2013);
- c) There should be proper monitoring of ICT infrastructure so that it cannot be used for watching any adult content or for playing;
- d) Proper training at regular intervals should be provided so that scope of committing errors can be minimised and at the same time they will become more efficient in respect to handling these equipment (Mingaine, 2013);
- e) Most of the ICT facilities have shorter life span because of changing technology, initially it is advisable to install only those facilities which are relatively less costly. In this respect use of locally available, locally assembled technology can be considered (Mingaine, 2013);
- f) Proper log book should be maintained for use of ICT facilities which are used by multiple users;
- g) There are some software and programmes designed especially for teaching English language only. These should be procured, installed and used in the class to make the teaching of English language more effective and efficient.

11.2 Limitations of the study

- a) The study is based on only one state and hence its findings cannot be generalised for the entire country.

- b) This study is based on the opinion of teachers chosen on the basis of a sample only. The limitations of sample survey is expected to be present in this study too.

11.3 Scope of future research

In order to generalise the findings of this study more such studies involving cross-sectional and longitudinal methodologies are required. Similar studies can be conducted to measure the attitude and awareness of the teachers towards ICT for teaching.

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