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Attitude Towards, and Awareness Of Using ICT in classrooms: A Case of Expatriate Indian Teachers in UAE

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Abstract

It is a widely accepted fact that ICT integration in education offers a wider opportunity for both teachers and students to fulfill the increasing demand of the contemporary world. The current paper explores the awareness of, and attitude towards, using ICT in teaching by the Indian teachers in UAE based on their gender and age. The data were collected through both questionnaire and interview. At the first phase of the data collection 57 teachers from 7 Indian curriculum schools were selected through consecutive sampling technique and 10 teachers, who were also subject coordinators, were selected through purposive sampling at the second phase. The findings of the study, through the analysis of both quantitative and qualitative data, revealed that teachers have a positive attitude towards using ICT irrespective of their gender and age. However, the ICT awareness of teachers is at the average level and is influenced by their gender and age. The findings suggest that ICT use for educational purposes should be given greater consideration than it currently receives. In general, the results were consistent with those previously reported in studies related to the use of ICT in the educational settings.

Keywords: ICT (Information and communication Technology), ICT integration , Attitude, Awareness

1. Introduction

The purpose of this paper is to divvy up the findings of the study conducted to explore the attitude towards, and awareness of Indian teachers in UAE in using ICT for teaching practices. The relevance of ICT is growing remarkably these days. Therefore, to keep pace with it teachers should certainly reformulate and reorient their classroom activities, i.e from manual source centered to open source centered. In most of the developing countries, efforts have been made to improve the ICT infrastructure in schools. Similar steps have been taken by the government of UAE to promote ICT in Education. Projects like IT Education Project (ITEP) and Smart Learning Programme (SLP) were launched by H.H. Sheikh Mohammed bin Rashid Al-Maktoum with an aim to initiate technology-based learning in UAE public schools.

UAE has more than 70 Indian curriculum schools (ADEC and KHDA report, 2013) to cater the educational needs of the expatriate Indian population which makes up approximately 30% (2.6 million) of the overall population in the country.ADEC(Abu Dhabi Education Council) and Dubai School Inspection Bureau, the school inspection department of KHDA (Knowledge and Human Development Authority), are responsible for the development of quality education in the emirates of Abu Dhabi, and Dubai. According to KHDA and ADEC, one of the key elements to improve the quality of education is ICT integration. The inspection reports of ADEC and KHDA show that the use of technology in most of the Indian curriculum schools in the country, as a pedagogical tool, are in its infancy. ADEC report (2014) revealed that ICT amenities are inefficiently used in a large number of Indian curriculum schools which hinders students' learning. Furthermore, most of the schools possess very few ICT resources that support the curriculum, especially in the classrooms. Regardless, the body of empirical research investigating the use of ICT in classrooms by the Indian teachers in UAE and also its relationship with other variables is relatively small.

Successful utilization of ICT in the field of education depends on numerous factors. One of the significant factors is teachers' attitude towards the use of technology in teaching and learning process. Ndibalema's (2014) study on ICT attitude of secondary school Tanzanian teachers and Ang'ondi's (2013) study on Kenyan teachers revealed the positive attitude of teachers towards using ICT in teaching. Similar studies conducted by Albirini's (2006) on Syrian EFL teachers and Heirati, & Alashti (2015) on100 EFL teachers in Iran and Al-Zaidiyeen et al. (2010) on Jordanian teachers and Rajasekar and Raja (2007) study on Indian teachers also prove the positive attitude of teachers around the world towards ICT integration.
Several research have been conducted to find out the influence of age and gender on teachers' ICT attitude.

Khjuria & Panwar (2012) study on teachers in India revealed that gender and age do not influence the attitude of teachers. Similar findings were reflected in the studies of Baker (2011) on Egyptian teachers and Cavas et al. (2010) on Turkish teachers. However, the same study proves that younger teachers have a more favourable attitude than their older colleagues. Nevertheless, Panigrahi's (2011) study on Indian teachers shows that age does not influence the ICT attitude. Baker's (2011) study also unveil that age and teaching experience do not affect the attitude of teachers. Prabhu's (2013) study on Indian teachers, on the other hand, revealed that novice teachers have a more favorable attitude than veterans. However, the studies unveil that teachers' ICT awareness is limited.

Studies conducted in this field also highlighted the barriers teachers face when they have to integrate ICT in teaching. So & Swatman (2006) reveal that lack of accessibility is a major hindrance to ICT use. Similarly, lack of training is considered as an obstacle to ICT integration by Bukaliya & Mubika (2011) and Oladosu (2012). Moreover, extensive curriculum and lack of time also prevent teachers from using technology (Unal & Ozturk ; Rahimi & Yadollahi,2011; Sardegna, 2015)

Berner (2003) and Summers(1990) pointed out that teachers' computer competence is an important factor influencing ICT integration in teaching. Sardegna (2015) explored Taiwanese primary teachers' computer literacy skills. The study observed that majority of teachers have adequate ICT skills. However, none of the teachers displayed excellent ICT skills. Kandasamy and Shah (2014) conducted a study on Malaysian ESL teachers' knowledge and attitude towards using ICT. The results of the study pointed out that most of the teachers are knowledgeable in using MS office, except MS excel and demonstrated a positive attitude towards using it in the classroom. The study revealed that positive attitude of teachers towards ICT influence their awareness in using it in the classroom.

Rahimi and Yadollahi (2011) investigated EFL teachers' ICT use based on their age and gender.The result reveals that teachers' age, gender, and attitude are inversely correlated with their use of ICT in the classroom. On the other hand, Goktas & Yildirim (2009) and Tezci's (2010) study on Turkish teachers show that male teachers are more competent than their female counterparts. Mahmud & Ismai's (2010) study on the effect of ICT training and ICT experience on teachers' basic ICT skills, ICT Knowledge and attitude also show that though the teachers possess a positive attitude towards ICT integration, their ICT awareness is limited to MS office.

A large number of studies in the literature have investigated this issue, however, very limited studies have been done on Indian teachers in UAE. Moreover, the convolution of the problem of ICT integration still continue and it is essential to explore the problem to have a better understanding of it.

2. Materials and Methods

This study aims to examine

1. What is the attitude of Indian teachers in UAE towards using ICT in teaching?
2. Is there a significant relation between teachers' gender and ICT attitude?
3. Is there a significant relation between teachers' age and ICT attitude?
4. What is the awareness of Indian teachers towards using ICT in teaching?
5. Is there a significant relation between teachers' gender and ICT awareness?
6. Is there a significant relation between teachers' age and ICT awareness?

The present study followed a mixed method where concurrent triangulation design is adopted to analyze the data to reach a conclusion. In the first phase of the study consecutive sampling technique was used for collecting quantitative data. This technique involves selecting all individuals who agree to participate in the study provided they meet the required criteria until the number of subjects desired has been recruited. 57 teachers teaching grades 8-12 from 7 Indian Curriculum schools in Abu Dhabi, UAE were taken as samples since a large majority of teachers in these schools are Indians.

In the second phase, the qualitative data for the study were collected through purposive sampling. 10 teachers, who were also subject coordinators were interviewed, to gather information regarding the ICT attitude, ICT awareness, and ICT use in the classroom by the teachers in their department.

To gather the quantitative data, the self-administered tool was constructed based on the findings from the literature especially by referring to the questionnaires used by Alberini (2004) and Al Sulaimani (2008). However, the items were modified to meet the demand of the present study. The instrument has been divided into three sections: Demographic details of the teachers, Teachers attitude towards using ICT, and Teachers awareness of using ICT.

A pilot study was conducted on 20 teachers to test the validity of the instrument. The validity of the instrument was established based on the feedback of the respondents, and also consulting with the experts in the field. The reliability of the ICT attitude and awareness scale is calculated using Cronbach's alpha. The value of both the scales were higher than .70 indicating the reliability of the tool.

In Teachers ICT Attitude scale the respondents were required to select their level of agreement with each

statement on a 5-point Likert scale ranging from *strongly disagree* to *strongly agree* while teachers' ICT awareness scale range from *excellent* to *very poor.*
The second phase of the study used qualitative Interview. The questions for the interview were drawn from the research objectives.

3. Statistical techniques

The data from the received questionnaires were coded and entered into the Statistical Package for Social Science (SPSS).
1. Descriptive Statistics mean, percentage, frequency, and standard deviation.
2. Inferential statistics: t-test of independence, ANOVA, Tukey post hoc test to determine the difference of means found in ANOVA.
The interview data were transcribed, organized into themes and categories to analyze further.

4. Result and discussions

Table 1: Demographic Information of Respondents

Variable	category	frequency	Percentage
Gender	Male	7	12.3%
	Female	50	87.7%
Age	21-30	16	28.1%
	31-40	27	47.4%
	>40	14	24.6%

In order to categorize the ICT attitude and awareness of teachers the following standards were used

High level : the mean of the participants ranging from 3.80 to 5 (75%-100%)
Average level : the mean of the participants range from 1.30 to 3.75 (26% -75%)
low level : the mean of the participants up to 1.25 (up to 25%).

4.1 ICT Attitude

Table 2: Descriptive statistics on teachers' attitude towards using ICT in classrooms

No.	Items	MIN	MAX	M	SD
1	ICT helps to organize teachers' work.	1.00	5.00	4.526	0.499
2	Using ICT makes lessons more interesting	1.00	5.00	4.403	0.490
3	ICTs are fastest means of getting information.	1.00	5.00	4.315	0.535
4	I enjoy using ICT in teaching.	1.00	5.00	3.631	1.036
5	ICT skills are needed for teachers to progress in their profession.	1.00	5.00	3.456	0.839
6	I use ICT in teaching if there are relevant equipments available at school.	1.00	5.00	4.403	0.490
7	Finding ICT resources for my subject is time consuming and difficult*	1.00	5.00	3.596	1.405
8	Capable teachers do not need ICT to teach*	1.00	5.00	3.105	1.020
9	Using ICT in classroom waste precious teaching time *	1.00	5.00	3.473	1.200
10	Everyone can easily learn to operate ICT devices.	1.00	5.00	3.947	0.686

Note: **Negative items are reversed before scoring.* N=57

Table 3: Gender difference in ICT attitude

	Groups compared						
	Male			Female			
	M	SD	n	M	SD	N	T
ICT attitude	37.14	3.24	7	36.42	2.61	50	.68*

*p<.05

Table 4: Descriptive Statistics on Age and ICT Attitude

Source	*df*	*SS*	*MS*	*F*	*P*
Between Groups	2	15.013	7.506	1.052	0.356
Within Groups	54	385.233	7.134		
Total	56	400.246			

Table 5: One way ANOVA of ICT attitude by age

Age	n	M	SD
21 - 30	16	37.25	2.933
31 - 40	27	36.41	2.438
> 40	14	35.86	2.797

1. What is the attitude of Indian teachers in UAE towards using ICT in teaching?
The table 2 shows the descriptive statistics of each item of the attitude scale which was measured on a 5 point Likert-scale ranging from 1 (strongly disagree) to 5 (strongly agree). High score in this section indicating a high positive attitude while a low score indicating a low positive attitude. The mean score of Q4, Q5, Q7,Q8, and Q9 are at the average level attitude where the mean is between 1.30 and 3.75 (26%-75%) and Q1,Q2,Q3.Q6, and Q10 are at the high level attitude where the mean score is between 3.80-5.00 (76%-100%). This indicates the positive attitude of teachers towards ICT use in classrooms.

2. Is there a significant relation between teachers' gender and ICT attitude?
The t-test result in table 3 reveals that there is no significant relation between Indian teachers' gender and attitude. Both male and female teachers have a favourable attitude towards using ICT in classrooms.

3. Is there a significant relation between teachers' age and ICT attitude?
Table 5 shows that there is no significant relation between teachers' age and their ICT attitude at $p< 0.05$ level for the three groups. Teachers who are 21-30 years , 31-40 years and > 40 years have a favourable attitude towards ICT use in classrooms.
The statistics is supported by the qualitative findings. The interview report shows that Indian teachers in UAE have a positive attitude towards using ICT. They also recognize the importance of ICT in the present day education system though they face several barriers when they have to use it in the classroom.

An English coordinator reported:

> *ICT integration motivates the students in learning which encourages the teachers as well to use it in teaching. The present day teachers should be able to use ICT as a teaching tool . But only a few classrooms in our school have smart boards and there is no internet connection in these classes. So if I have to show a video clipping I need to copy it to my USB. .....The use of ICT is limited in grade 10 and 12 as we have to complete the curriculum and also prepare the students for the exam..... we do not get time to use ICT in those classes.*

Similar view has been shared by a physics coordinator*:*
Abstract concepts in Physics can be easily explained by using ICT. Most of the teachers in my department use it in class whenever possible. Some dangerous experiments can be shown using ICT so that students have the feel of a virtual lab..... Teaching with ICT is time-consuming. So teachers who teach classes 10 and 12 may use it occasionally because we have to cover the curriculum and prepare the students for the exam.
A Commerce and Business studies coordinator stated*:*

> *ICT integration is the need of the day. It helps to explain the subject matter easily. Moreover, it also helps to engage the students in the learning process. All our teachers are ready to use ICT. But we do not have smart boards in all the classrooms, so every teacher cannot use it. Sometimes we exchange classes for that.*

The participants of the interview reported that teachers in their departments enjoy using ICT irrespective of their age and gender. However, they insist on the importance of ICT training.
An English coordinator respond:

Even though there are only a few male teachers in my department I haven't notice any difference among them in using ICT. Sometimes I feel that the older teachers are lacking confidence in using ICT.I always encourage them and give them support.

A physics coordinator also said:

There is only one male teacher in my department..... Both male and female teachers are enthusiastic about ICT integration. The older teachers in my department learn the necessary ICT skills from the younger teachers. They are fervent about using ICT in teaching. However, I think we need more training in this regard so that more and more teachers use technology in teaching..... The training that we receive in the beginning of every year is related to using the smart board.

A Chemistry coordinator stated:

Both male and female teachers in my department use ICT in teaching. Not only that they really enjoy using it. Most of the teachers in my department are young . However, the older teachers get support from them when they have to use ICT and are enthusiastic about using it. I feel that Older teachers will gain more confidence with a little more training .

The qualitative results also shows that Indian teachers from UAE, have a positive attitude towards using ICT irrespective of their age and gender. The study supports the previous studies of Khjuria & Panwar (2012) , Baker (2010) , Heirati & Alashti (2015) where age and gender did not influence the attitude of teachers. However, the study contradicts some previous studies where younger teachers displayed a more favourable attitude than their older counterparts. Similarly, the findings also disagree with the studies where male teachers having a more favourable attitude than female teachers.

Nevertheless, the findings of this study prove that even though teachers have a positive attitude towards ICT integration it is limited because of various barriers. The major barriers are lack of access to infrastructure, lack of training and the lack of time. The present study aligns with So & Swatman (2006) who found that despite having a favourable attitude towards ICT integration lack of accessibility stand as an obstacle. Bukaliya & Mubika (2011) and Oladosu (2012) also found in their studies that teachers are not using ICT because of lack of training and lack of accessibility. The findings of the current study also agree with Albirini's (2006) ,Unal & Ozturk (2012)and Sardegna(2015) when they observed the lack of time as a major hindrance when teachers have to use ICT in their teaching practices. The qualitative finding also noted that most of the teachers are not using ICT since they have to prepare the students for the exam and also cover the curriculum. Unal & Ozturk and Rahimi & Yadollahi (2011) also pointed out that time is a major obstacle if teachers have to cover an extensive curriculum. Hence, to involve more teachers in using ICT in their teaching practices these barriers should be resolved.

4.2 ***ICT Awareness***

Table 6: Descriptive statistics on teachers' awareness of using ICT in classrooms

No.	Items	MIN.	MAX	M	SD
1	Organizing and saving educational files in folders.	1.00	5.00	4.368	1.002
2	Creating power points/Prezi for your lessons.	1.00	5.00	4.175	1.141
3	Preparing lesson plans, and educational materials using word processing programme .	1.00	5.00	4.140	1.130
4	Managing operating systems (changing desktop settings, date, time region, the degree of screen clarity.	1.00	5.00	4.000	1.184
5	Using CD-ROM, USBs for teaching purpose	1.00	5.00	2.526	1.200
6	Downloading learning resources for students from different educational sites.	1.00	5.00	2.894	0.930
7	Organizing email groups for sending information and instructions	1.00	5.00	2.473	1.171
8	Using Edmodo or such applications to manage communication with students and collaborate with teachers.	1.00	5.00	1.684	0.939
9	Conducting online tests for students.	1.00	5.00	1.754	0.941
10	Using learning management system to facilitate Student learning(eg.Moodle, webCT)	1.00	5.00	2.456	1.185

Note: N=57

Table 7 : Gender difference in ICT awareness

	Groups compared						
	Male			Female			
	M	SD	n	M	SD	n	t
ICT awareness	36.57	3.26	7	29.62	7.751	50	2.33*

*p<0.05

Table 8: Descriptive Statistics on Age and ICT Awareness

Age	n	M	SD
21 - 30	16	35.94	3.47
31 - 40	27	28.56	8.29
> 40	14	27.93	7.17

Table 9: One -way ANOVA of ICT Awareness by Age

Source	*df*	*SS*	*MS*	*F*	*P*
Between Groups	2	667.678	333.839	6.838	0.002
Within Groups	54	2636.533	48.825		
Total	56	3304.211			

4. What is the awareness of Indian teachers towards using ICT in teaching?
Each item of the awareness scale was measured on a 5 point Likert-scale ranging from 1 (Excellent) to 5 (Very poor).High score in this section indicating a high level ICT awareness while a low score indicating a low level awareness. Table 6 shows that the mean score of most the items, Q5,Q6,Q7,Q6,Q9,Q10 are at the average level which is between 1.30 and 3.75 (26%-75%) . Only Q1,Q2,Q3,and Q4 are at high level where the mean score is between 3.80-5.00 (76%-100%).This shows that the teachers ICT awareness is at the average level.

5. Is there a significant relation between teachers' gender and ICT awareness?
The t-test results in table 7 reveal that there is a significant relation between Indian teachers' gender and ICT awareness. The male teachers have better ICT awareness compared to their female counter parts.

6. Is there a significant relation between teachers' age and ICT awareness?
Table 9 shows that there is a significant relation between teachers' age and their ICT awareness at $p< 0.01$ level for the three groups. The ICT awareness score is significantly higher in the age groups 21-30 years compared to the groups 31-40 years and above 40 years. Hence, teachers in the age group of 21-30 have a better ICT awareness.

The qualitative findings continue to reveal that teachers' ICT awareness is limited to using power points and videos. Teachers are not aware of any other online resources.
On asking about the ICT resources commonly used by the teachers in the department a Biology coordinator stated:

> *Teachers in my department use ICT whenever it is possible. We use power points and videos. I don't think that any teacher use online test or quizzes since we don't have internet connection in our classrooms. To take the students to the computer lab for such tests is difficult. The only training we receive every year is to use the smart board. None of my teachers use any applications to interact with students online.*

A mathematics coordinator responded in a similar vein:

> *We use ICT mainly to teach geometry. The consultancies who have installed the smart board have also installed software that can be used in class. It consists of question banks and presentations related to the topic. CDs are also available for each lesson based on the curriculum. Most of our teachers avail these resources which are easy to use. We do not share our power points with the students.*

An English coordinator said:

.....Power points are used if we have to teach grammar. We also use video clippings to show the movies related to the novel or short stories. No teacher in my department, as far as I know use any applications to share the power point or other resources with students.

A physics coordinator reported:

..... Our lesson plans are done manually. We do not use the computer for that. However, we record the student's marks on excel. ..... power points are used in classes where smart boards are available.

On asking about the ICT awareness of younger and older teachers in the department

A Humanities coordinator pointed out:

.....The younger teachers prefer to use ICT more than the older ones. The older teachers are used to lecture method. We are giving them support.

A Chemistry coordinator pointed out:

Younger teachers in my department use ICT more than the older teachers. They get help from the younger colleagues and sometimes even students. The older teachers are more used to traditional methods of teaching. Even though there is only one male teacher in my department, I haven't noticed any gender difference in ICT integration.

An English coordinator reported:

Both male and female teachers in my department use ICT. In fact, we learn from each other. Younger teachers in my department are more into ICT integration. The older colleagues sometimes struggle with computers because they are not used to it.

The interview report shows that teachers' knowledge in using ICT in the classroom is so limited. Teachers are not using web-based methods, or any interactive sites to promote learning.ICT resources used are inadequate with regard to technological design, pedagogical approach, and content knowledge. Technology is more or less used as an add- on to the traditional teaching rather than integrating into the curriculum. Teachers in the study believe that using power points and video clippings in their lesson is the only way to integrate ICT. The findings align with Tezci (2010) who found that teachers' ICT knowledge is limited to using CDs. Furthermore, the barriers like lack of internet connection in the classroom also limit their use of technology as a pedagogical tool.

The quantitative findings of this study contradict Rahimi &Yadollahi (2011) where gender does not influence teachers' ICT awareness. The study aligns with the findings of Goktas and Yildirim (2009) and Hakkarainen et al (2001) where male teachers demonstrated a better ICT awareness than their female counterparts. However, the interview report shows that gender does not influence the ICT awareness of teachers. This divergent finding can be because the survey might have failed to capture the reality of the situation. Additionally, the participants of the interview were head of departments and have a better knowledge of how technology is used by them and the teachers in their department.

The qualitative and quantitative findings are in line with Al-Sulaimani (2010) where younger teachers have a better ICT awareness compared to their older counterparts. This could be because they have more exposure to, and familiarity with technology than their older colleagues. However, the knowledge is limited to using power points and CDs rather than any other online resources. As a result, the fundamentals of teaching remains the same. the study aligns with Kandasamy and Shah (2014) and Mahmud & Ismai's (2010) who found that teachers' ICT knowledge is limited to MS office.

Conclusion

Using ICT in teaching practices to facilitate student learning seems to be a critical situation among Indian teachers in UAE. Though teachers have a positive attitude lack of competence came out as a hindrance to ICT integration. Teachers who are not ICT skilled may be unable to contribute to ICT integrated learning. The problem is compounded by the lack of proper training given to teachers to enhance their use of ICT as a pedagogical tool. The training teachers received were general in nature and not contributing much to improve their ICT skills. The training given to teachers should be tailored to their need so that they can use ICT in their regular teaching practices.

Moreover, ICT is only considered as a tool to support traditional teaching. As a result, teachers are not aware of the wider opportunities of technology in education. Teachers should also take personal initiatives to make use of the available resources for the successful integration of ICT in teaching. Collaboration with teachers worldwide will help them to gain ideas about innovative teaching methods and web-based learning techniques to integrate ICT effectively in their classroom teaching.

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