

Application of ICT effectiveness in Teaching Process in Management Education - An Analysis

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Abstract

As India moves ahead on the pervasive usage of technology on all spheres of life, our educational institutions cannot be falling behind in catching up with the pace. Karnataka is at the forefront of the technology thrust and it is only natural that the students and faculty members of the educational institutions would aspire to be in the forefront of using Information and communication technologies in teaching and learning. This paper attempts to capture the mood and preparedness of the professors in the Business Management educational institutions in Karnataka through an exploratory study of ICT effectiveness in teaching process. The study extends across eight premier institutions of Karnataka and presents the data from about 500 professors of Management education. The results indicate that approximately more than 50% of the professors are positive about the effectiveness of ICT in teaching but are tentative when it comes to their ability to use innovative tools to improve student learning. This may indicate the need for more awareness and training with provision of required infrastructure and connectivity in the institutions.

Key Words and Phrases: *Management Education, usage of ICT, Information and Communication technologies, MBA colleges in Karnataka, E-learning, and Technology enabled education, ICT effectiveness, and Effective teaching process.*

Introduction

Use of ICT (Information and Communication Technologies) has been extensively tried and researched for more than a couple of decades now, especially since the advent of internet. While the use of ICT or Internet

technologies has grown in leaps and bounds in most other walks of life, its usage in traditional classroom education remains scattered and mostly unclear. The usage of ICT in distance education or online education has a clear purpose or benefit in providing better

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traction to learning and teaching by reducing the transactional distance and providing better scaffolding and engagement.

This is not the case in classroom where the conditions of teaching and learning are quite different. However, there have been increasing trials on using ICT in classroom learning with the evolution of the blended learning context, in the form of flipped learning or augmented learning. Many of these initiatives of using ICT in schools or colleges have found their origin and occurrence in the western countries, though these have been at a nascent level of interest and activity in Indian colleges in the last decade. There have been several pioneering attempts by some Universities in introducing and promoting technology enabled learning. Examples could be found in Amity University, Lovely Professional University, Manipal University, Amrita University, SRM University, NIIT University, all of these being in private sector.

There has also been an emerging interest and a flurry of activities in researching various aspects of using ICT in colleges in India, in parallel, over the last decade. However, there does not seem to be any maturing process in establishing ICT enabled teaching and learning as a standard paradigm in Indian colleges yet.

There could be many reasons for the slow diffusion or sporadic adoption of ICT in teaching and learning in the Indian colleges. Lack of adequate infrastructure such as PCs, laptops, bandwidth, availability of teacher and student time, lack of awareness and training, easier availability of alternative methods, lack of funds and investments, absence of will or motivation to implement such initiatives due to the non-profit nature of the education sector in India, all contribute to the lethargic pace of progress in ICT usage, not to forget to mention the resistance to change and the strong belief that ICT cannot substitute a real teacher in the class room.

Nevertheless, this does not diminish or negate the appreciation that progressive initiatives and research attempts should continue to an extensive level, whereby more clarity could result towards ICT usage in Indian colleges. This is necessary due to the high rate of diffusion of internet technologies into every walk of life in society and business, necessitating that education also keeps pace to meet their needs. The constantly

emerging newer job skills, product landscapes and service innovation require that the colleges find ways to address these critical needs of society and business. This need is becoming acute in the field of business education when there are repeated questions coming up on the employability and relevant skills of graduating students to the industry.

This article tries to address a small part of the questions that are posed by presenting the findings of a survey undertaken with some of the premier institutes in Bangalore, Karnataka to assess the perception of the faculty members on the effectiveness of using ICT in teaching.

REVIEW OF LITERATURE:

The attitude of the teachers and their perception of ICT usage being effective is critical for implementation in teaching and learning. **Light, Daniel (2010)** studied the factors facilitating the implementation of the learnings from a training programme for the faculty members on ICT usage in teaching and learning and found that the teachers agreed that their practices in teaching had changed after the training programme. **Kumar R.M. and Krishna Kumar R. (2010)** studied the impact of e-learning on teacher effectiveness, with reference to personal effectiveness, teaching skill and research and academic activities. They concluded that personal effectiveness and teaching skills are high when e-learning is used. **Magnier-Watanabe R., Benton C., Herrig H. & Aba O. (2011)** presented a paper describing their experiences in conducting a graduate management course using video conferencing and other ICT tools. The authors used a blended teaching approach aimed at increasing collaboration among the instructors and students. This resulted in the positive feedback on e-learning with the face to face approach.

Sharma, Dharendra and Singh, Vikram (2011), in their study involving the faculty members of Universities in the Western Himalayan Region of India found a positive impact of the training provided to the faculty members, resulting in successful implementation of ICT in classrooms. **Benson, Vladina, Anderson Deborah, Ooms Ann (2011)** explored in their paper, the adoption of blended learning practices at a Business School in a University in the UK. Their study found that though all the

faculty members were positively inclined towards using ICT in their teaching, the barriers they encountered had a negative impact on the implementation. **Al-Busaidi K.A. & Al-Shihi H. (2012)**, examined the key factors that determined the satisfaction of the instructors with the LMS in blended learning, and how this satisfaction is related to their intention to use the LMS for blended learning. The findings indicated that computer anxiety, personal innovativeness, LMS characteristics, and organizational characteristics (management support, incentives policy and training) are key to successful implementation.

Kanaganayagam I., Fernando S. and Jayasundara R. (2014) conducted a study on Collaborative E-learning and found that the collaborative mode of teaching and learning was highly successful. It specifically improved the cognitive skills, processing skills and interactions between the students.

Livingstone, Kerwin (2015) conducted a study, through mixed methods approach, with the faculty members at University of Guyana and found that the faculty members' perception was positively inclined towards the use of ICT in teaching and learning. Through this study, it was recommended that e-learning practices be integrated into their pedagogical practices in the University. **Ghavifekr, Simin and Wan Rosdy, Wan Athirah (2015)**, through their survey conducted from 101 teachers in 10 public schools in Kuala Lumpur, Malaysia, presented that teachers preparedness with ICT tools and facilities was one of the main success factors in the implementation of ICT in teaching and learning. Using ICT in teaching and learning provides teachers the flexibility to teach students individually or in groups. Results revealed that the teachers found the implementation appropriate, relevant but demanding. The major challenges were limited access to some of the technologies, fluctuation in internet connectivity and poor ICT literacy skills. Improvement in the level of ICT use required the development of relevant infrastructure and ICT literacy training which were found as critical for successful deployment.

Adetimirin, Airen (2016) studied the reactions of teachers who went through a training programme on

ICT integration at the University of Ibadan and observed that the teachers were feeling very positive about the programme and felt that the programme was highly relevant, appropriate but demanding.

STATEMENT OF THE PROBLEM

Though implementation of ICT enabled education is seen throughout the world in different countries and many research projects have been studied and published, the research efforts on the use of ICT in India is still at a nascent stage. Further, India needs to overcome many obstacles towards effective implementation of ICT usage in education through high level of investments in connectivity and bandwidth to provide critical access to teachers and students in the Universities. In addition to this critical data on the preparedness of teachers in terms of their perception of effectiveness of ICT usage in their teaching needs to be established. Though all the literature reviewed show initiatives on ICT effectiveness, it is critical that we evaluate such data locally in India, through extensive research efforts. Though Karnataka state, and in particular, Bangalore city is known for its high level of Information technology infrastructure and awareness, we still do not have enough documented information in terms of the situation prevailing in the local institutions. Further, very little data or information is available about the perception of professors in Business Management education and their inclination to use ICT in their teaching. In view of the advanced level of IT infrastructure and industries in Bangalore, it will be expected that the educational institutions, especially the Management education schools come up to speed on implementation of ICT initiatives successfully. The present study is significant in this context and throws up data on the perceptions of Business Management professors on their ability and propensity to use ICT effectively in their teaching process.

RESEARCH DESIGN & METHODOLOGY

Since this study is one of its kind in Bangalore city addressing the question of ICT usage in Management education institutions, Purposive sampling method is used in the selection of respondents in a few Business management education institutions. The samples were selected based upon the following judgmental criteria.

1. Availability of reasonable ICT infrastructure
2. Institutions following contemporary approaches in teaching and learning
3. Information rich cases for study
4. Willingness of respondents to participate in the study.
5. The assumption made in the selection of the sample was that these samples would give us the upper level of data to be used for analysis, so that we may infer the status of other levels of institutions by default.

The type of research conducted was exploratory research using the survey by questionnaire method.

Population: The population was deemed to be Management education professors in the state of Karnataka, which is unknown to us.

A pilot study was done based on which a standard deviation was arrived at.

The standard deviation value from the pilot study, considering question on 'effective teaching' was found to be 0.75. The Sample size, when population is unknown, is estimated (Malhotra and Birks, 2006) using the following formula:

$$n = \sigma^2 \cdot z^2 / D^2$$

σ = standard deviation = 0.75

D = level of acceptable error = 0.05 (Level of significance)

z = standard variant = 1.52

n = estimated sample size = (520.87) = 521

Questionnaire for Professors

Effective Teaching

No	Effective Teaching with ICT tools	SDA	DA	N	A	SA
1	You use innovative ICT tools for teaching and encourage students to use ICT for learning					

2	ICT helped you to learn and teach better					
3	Use of ICT has increased quality of teaching					
4	ICT enhances professional development of the professor					
5	ICT usage increases the assessment skills of the professor					

SDA: Strongly Disagree, DA: Disagree, N: Neutral, A: Agree, SA: Strongly Agree

Tabulation and Collation of Data

Analysis of percentage under each response

EFFECTIVE TEACHING

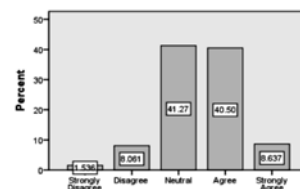
TABLE - 1

YOU USE INNOVATIVE ICT TOOLS FOR TEACHING AND ENCOURAGE STUDENTS TO USE ICT FOR LEARNING

Particulars	Number of Respondents	Percentage (%)
Strongly disagree	8	1.5
Disagree	42	8.1
Neutral	215	41.3
Agree	211	40.5
Strongly Agree	45	8.6
Total	521	100.0

Source: Primary Data

FIGURE - 1



Result

It can be seen from Table 1.0 that “You use innovative ICT tools for teaching and encourage students to use ICT for learning” obtained the following ratings 1.5% respondents rated strongly disagree, 8.1% respondents rated disagree, 41.3% respondents rated neutral, 40.5% respondents rated Agree and 8.6% respondents rated strongly agree.

Inference

“Neutral” dominates the rating for “You use innovative ICT tools for teaching and encourage students to use ICT for learning.”

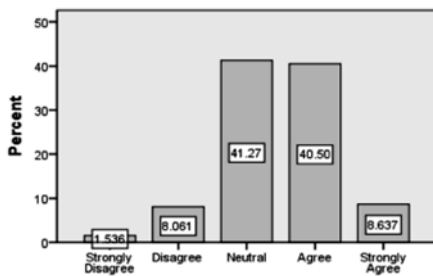
TABLE – 2

ICT HELPED YOU TO LEARN AND TEACH BETTER

Particulars	Number of Respondents	Percentage (%)
Strongly disagree	16	3.1
Disagree	35	6.7
Neutral	155	29.8
Agree	230	44.1
Strongly Agree	85	16.3
Total	521	100.0

Source: Primary Data

FIGURE - 2



Result :

It can be seen from Table 2.0 that “ICT helped you to learn and teach better” obtained the following ratings

3.1% respondents rated strongly disagree, 6.7% respondents rated disagree, 29.8% respondents rated neutral, 44.2% respondents rated Agree and 16.3% respondents rated strongly agree.

Inference

“Agree” dominates the rating for “helped you to learn and teach better.”

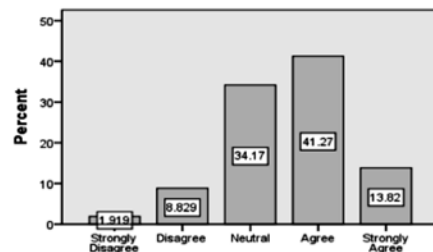
TABLE – 3

USE OF ICT HAS INCREASED QUALITY OF TEACHING

Particulars	Number of Respondents	Percentage (%)
Strongly disagree	10	1.9
Disagree	46	8.8
Neutral	178	34.2
Agree	215	41.3
Strongly Agree	72	13.8
Total	521	100.0

Source: Primary Data

FIGURE - 3



Result :

It can be seen from Table 3.0 that “Use of ICT has increased quality of teaching” obtained the following ratings 1.9% respondents rated strongly disagree, 8.8% respondents rated disagree, 34.2% respondents rated neutral, 41.3% respondents rated Agree and 13.8% respondents rated strongly agree.

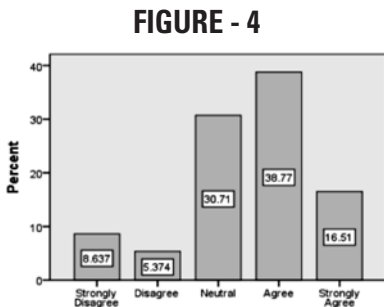
Inference

“Agree” dominates the rating for “Use of ICT has increased quality of teaching.”

TABLE – 4
ICT ENHANCES PROFESSIONAL DEVELOPMENT OF THE PROFESSOR

Particulars	Number of Respondents	Percentage (%)
Strongly disagree	45	8.6
Disagree	28	5.4
Neutral	160	30.7
Agree	202	38.8
Strongly Agree	86	16.5
Total	521	100.0

Source: Primary Data



Result :

It can be seen from Table 4.0 that “ICT enhances professional development of the professor” obtained the following ratings 8.6% respondents rated strongly disagree, 5.4% respondents rated disagree, 30.7% respondents rated neutral, 38.8% respondents rated Agree and 16.5% respondents rated strongly agree.

Inference

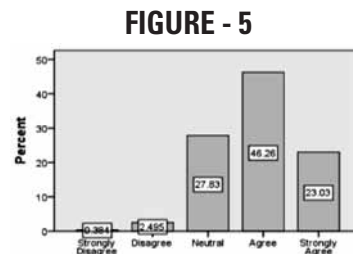
“Agree” dominates the rating for “enhances professional development of the professor.”

TABLE - 5

ICT USAGE INCREASES THE ASSESSMENT SKILLS OF THE PROFESSOR

Particulars	Number of Respondents	Percentage (%)
Strongly disagree	2	0.4
Disagree	13	2.5
Neutral	145	27.8
Agree	241	46.3
Strongly Agree	120	23.0
Total	521	100.0

Source: Primary Data



Result :

It can be seen from Table 5.0 that “ICT usage increases the assessment skills of the professor” obtained the following ratings 0.4% respondents rated strongly disagree, 2.5% respondents rated disagree, 27.8% respondents rated neutral, 46.3% respondents rated Agree and 23.0% respondents rated strongly agree.

Inference

“Agree” dominates the rating for “ICT usage increases the assessment skills of the professor.”

Analysis and Inference

From the Table 1.0, we see that 49% of the professors agree that they use innovative ICT tools in teaching, and they encourage students

to use ICT tools too. This is a positive indication and needs to be strengthened further. Only less than 10% disagree that they use innovative ICT tools. However, about 41% of the professors are neutral towards such a statement and this needs further investigation to see what more could be done to turn this into a positive statement. There may be many constraints which may be limiting such professors from using the ICT tools including resources, time and motivation.

From Table 2.0, about 60% of the professors agree that ICT helps them to learn and teach better and this is a very strong positive statement. Only about less than 10% of the professors feel negatively about this and about 30% are neutral. More investigation is required into these statements for reasons as to their views.

Table 3.0 shows that about 55% of the professors are positive about ICT increasing the quality of teaching and this is a positive reason for encouraging them to use ICT better. Only about 11% of the professors have negative views and about 34% are neutral. Investigation into the reasons will lead us to more useful inferences to take suitable action to turn these into positive views.

Table 4.0 shows that almost 55% of the professors feel that using ICT improves their professional image and standing among the students. This needs to be further strengthened by providing incentives and better support for using ICT tools in teaching. About less than 15% feel negative about this and 30% are neutral. This needs more investigation for taking measures to address the issues involved.

Table 5.0 provides the data to show that almost 70% of the professors use ICT tools for improving their assessment skills. Only a very small 3% feel negatively about this and 27% are neutral. With better support, the professors could use ICT tools for assessments effectively.

Overall, the response of the professors to the use of ICT tools is extremely positive and confirms that the use of ICT in teaching is effective. Hence the

time is ripe to push higher use of ICT in teaching by removing any bottlenecks and challenges facing the professors to improve the quality of teaching.

CONCLUSIONS:

From this study, it is seen that substantially higher percentage of respondents are positive about the usage of ICT in their teaching. However, there is a substantial proportion of professors who are currently neutral to this concept and hence require better support and encouragement. This means that more training and creation of further awareness is required to ensure that this proportion increases. The responses also indicate that the situation is ripe for extensive use of ICT in teaching processes to provide motivation and value to the teachers. Implementation of ICT requires a deliberate planning and communication including extensive training to be able to carry conviction and buy in from the faculty members and students. The Universities and colleges should capitalize on the positive perception prevalent among the faculty members and use them as "Change Agents" to drive adoption of ICT in the classrooms. All possible encouragement should be given to the positive respondents to access and use innovative tools and software in their teaching process. They should also be provided for avenues to increase their own skills and level of competency in using ICT in classes by attending workshops and training programmes. Teachers should also be encouraged to experiment and innovate on their teaching so that they would feel confident about using ICT comfortably.

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