"Enhancing B.Ed. Trainee Education Through ICT Integration: A Critical Study in Manipur"

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Abstract

In this digital world, it is really hard to teacher without ICT as it is essential part of education. Without which, the education is half hearted. It is the need of the hour, to have the skills of ICT among the teachers. Therefore, the skills of ICT are essential qualification for teachers in the modern context at the time recruitment. During the teacher's training too, the ICT integration is becoming important in the perspectives of school education in the state as well as Nation too. The study has examined the effective uses of ICT during the B.Ed. course and also suggested the remedial measures for further improvement in term of ICT skills in teacher education programme.

Key words used*: ICT-Integration, B. Ed, Trainees etc*

Justification of the study:

In most advanced countries, significant investments are made in the area of information processing and ICT as a key instrument in the teaching-learning process. The application of ICT is creating significant changes in the teaching and learning process, promoting a learner-centered approach rather than conventional teacher-centered pedagogy. The present-day curricula promote aptitude and performance of the learners, emphasizing on the application of information rather than factual knowledge. ICT in teaching and learning highly motivates the students, and teachers are required to be aware of ICT techniques that can be applied in classroom teaching.

The use of ICT in education has the potential to impact student learning when teachers are digitally literate and understand how to integrate it into the curriculum. Schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. In some contexts, ICT has also become integral to the teaching-learning interaction, through approaches such as replacing chalkboards with interactive digital whiteboards, using students' own smartphones or other devices for learning during class time, and the flipped classroom model where students watch lectures at home and use class time for discussion and problem-solving activities.

Digital culture and digital literacy have changed the ways people live, work, play, and learn, impacting the teaching and learning process. Technology integration in the classroom also has the potential to support important educational goals, change teacher-student relationships, encourage project-based learning styles, and support the acquisition of skills such as "higher order thinking," analysis, and problem-solving.
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Furthermore, increasing ICT capital in universities can improve student participation by enabling online teaching and self-learning. Online teaching allows a focus on underperforming students while offering everyone complementary lessons. This education tool has been used to facilitate the dissemination of specific courses.

In summary, the integration of ICT in education has the potential to transform the teaching and learning process, making it more inclusive and learner-centered and providing opportunities for improved educational performance and motivation among students.

Review of related literature:

(1) **Jayalakshmi, B (2018): A study on attitude towards ICT and blended learning among B.Ed. students in Kancheepuram District** under the objectives of : To find out the difference in the means scores of attitude towards ICT and blended learning among B.Ed. student's based on gender (boy/girl), age (below 25 years/above 25 years) and found out that (a) There is a significant difference found between male and female students in attitude towards ICT, but not for blended learning. And (b) There is no significant differences exist.

(2) **Deivam, M(2016): ICT literacy among B.Ed. teacher trainees. Ph.D, Tamil Nadu** under the objectives of : (a) To explore the ICT literacy among the B.Ed. teacher trainees. (b) To find out the significant difference between Tamil and English medium of B.Ed. teacher trainees on ICT literacy. (c) To find out the main score of B.Ed. teacher trainees on ICT literacy. (d) To explore the significance difference between rural and urban of B.ed teacher trainees on ICT literacy and found out that : (a) There was no significance difference between male and female B.ed teacher trainees on ICT literacy. (c) There was no significant difference between Tamil and English B.Ed teacher trainees on ICT literacy. (d) There was significant difference between rural and urban B.Ed teacher trainees on ICT literacy. (e) Urban teacher trainees ICT literacy was higher than the rural B.ed teacher trainees.

(3) **Hadi Salehi and Zeinab Salehi(2012): Challenges for using ICT in education: Teacher's insight. Ph.D, National University of Malaysia** Under the following objectives of : (a) To Examine the barriers for using ICT in education can assist the educators to overcome the obstacles and integrate the ICT in everyday education. (b) To investigate the teachers' perceptions of the barriers and challenges preventing teachers to integrate ICT in the classroom and found out that: (a) The findings indicated that although teachers had a strong desire to use ICT in the classroom, they were encountered with some barriers. Insufficient technical supports at schools and little access to Internet and ICT were considered as the major barriers preventing teachers to integrate ICT into the curriculum. Moreover, the descriptive analysis of the results showed that shortage of class time was another significant barrier discouraging teachers to use ICT into the classroom.

(4) **M.J. Philomina and S. Amutha (2016): Information and communication technology awareness among teacher educators. Ph. D and assistant professor, department of educational technology Bharathidasa University** under the objectives of : (a) To ascertain the ICT awareness among teacher educators. (b) To evolve recommendations for policy makers based on the findings and found out that : (a) The results indicate that Indian teacher educators awareness towards ICT differs regarding gender and subject. When compared with M.Ed. and M.Phil. scholars, Ph.D. scholars surpassed the M.Ed. and M.Phil. scholars in terms of ICT awareness in different dimensions. Indeed in India teacher educators' awareness on ICT integration needs to be strengthened**.**

 (5) **Simeo Boniphace, Michael Shandrack and said Noyi(2014): ICT application in teaching and learning process by tutors: A case of two selected Tanzania Teachers Colleges(TCs). Mzumbe University** under the objectives of: To scrutinize the extent of application of Information and Communication Technologies in Teaching and Learning processes by Tutors in teachers colleges in Mara Regions in Tanzania and found out that: (a) The study found large extent of ICTs application by tutors although its application is not efficient despite the roles ICTs can play in education.

Conclusion: It can be concluded that the topic of the study was not conducted by anybody before as it is new area of study for the improvement of ICT in the B.Ed. colleges in Manipur. This study will help to improve the quality of the teacher education in Manipur.

Statement of the problem: The problem for study can be stated as given below: **"Enhancing B.Ed. Trainee Education Through ICT Integration: A Critical Study in Manipur"**

Definitions of the key terms used:

1. **ICT:** information and communication technology

2. **ICT Integration:** Application of ICT in Teaching-Learning Process with Pedagogy.

3. **B.** Ed: Bachelor of education

4. **Trainee :** Students of two years B.Ed. course

Objective of the study: The objective of the study were stated below:

1. To examine the level of effectiveness in using ICT among faculty members in the classroom transaction during the B.Ed. course.

2. To examine the different levels of effectiveness in lesson understanding by using ICT in the classroom transaction among male and female trainees during the course.

3. To examine the different levels of effectiveness in lesson understanding by using ICT in classroom transaction among arts and science trainees during the course.

4. To examine the different levels of effectiveness in lesson understanding by using ICT in classroom transaction among different B.Ed. Colleges.

5. To find out suggestions and remedial measures in order to improve the use of ICT in training process.

Hypothesis of the study: In order to achieve the objectives of the present study, the following hypothesis were formulated:

1. There is no significant level of effectiveness in using ICT among the faculty members in classroom transaction during the B.Ed. course.

2. There is no significant difference in the level of effectiveness in lesson understanding by using ICT in classroom transaction among the male and female trainees during the course.

3. There is no significant difference in lesson understanding by using ICT in classroom transaction among the arts and science trainees during the course.

4. There is no significant deference level of effectiveness in lesson understanding by using ICT in classroom transaction among B.Ed. Colleges.

Delimitation of the study:

1. The present study was limited to only 4 B.Ed. colleges of Manipur namely:
   a) D. M. College of Teacher Education, Imphal
   b) R. K. Sanatombi College of Education, Imphal
   c) Teacher Education, Manipur University and
   d) Ibotombi college of education, Canchipur

2. The study was limited only during the session 2021-2022

3. The study was limited only to the area of ICT.

Analysis and Interpretation of Data:

Objective: 01: To examine the overall level of using ICT among the faculty members in classroom transaction during the B.Ed. course of four B.Ed. colleges within the districts of Imphal West.

Table No: 1: Showing the overall level of using ICT among the faculty members in classroom transaction during the B.Ed. course of four B.Ed. colleges within the districts of Imphal West.

SL	ITEMS	Right Answer	%	Wrong Answer	%
1	Do you find well furnished ICT Lab at your college?	63	52.50	57	47.51
2	Whether the size and number of computers in ICT Lab with reference to trainees is enough?	21	17.50	99	82.5
3	Do you agree that all computers are not internet and intranet connected?	35	29.17	85	70.83
4	Do faculty members use regularly ICT during classroom instruction?	67	55.83	53	44.17
5	Don't you find Wi-Fi facility within the college campus to be assessable to teachers and trainees?	64	53.33	56	46.66
6	Whether all classrooms of the college are smart classes?	48	40	72	60
7	Whether college has uninterrupted powerfully for the maintenance of ICT Lab like Electric Generator?	28	23.33	92	76.67
8	Don't you agree that the working hours of ICT-Lab is quite reasonable?	50	41.67	70	58.33
9	Whether the using of smart phones are helpful to the student teachers in connection with training?	112	93.33	8	6.67
10	Do you find the disadvantages of using of ICT in classroom transaction?	57	47.50	63	52.5
11	Do you agree that there is the differences between male and female teachers in terms of using ICT in the class room transaction?	50	41.67	70	58.33
12	Don't you accept that science student teachers are more familiar with ICT as compare to arts student teacher?	62	51.67	58	48.33
13	Do you agree that the use ICT instruction in classroom is must in better understanding the lessons among student teachers?	101	84.17	19	15.83
14	Whether your attitude towards teaching has been improved because of using ICT in class room transaction?	96	80	24	20
15	Whether concerned subject teachers are not organising frequently and regularly the seminar and presentation among the trainees?	77	64.17	43	35.83
16	Don't you find that frequent projects are given to the trainees for improvement of in using ICT?	37	30.83	83	69.17
17	Does the college installed Biometric attendance for trainees as well as teachers?	120	100	0	0
18	Whether institution hasn't ICT department for the teaching-learning materials development for the teacher and trainees?	47	39.17	73	60.83
19	Don't you find the subscription of E-Journals to assessable by the teachers as well as trainees?	71	59.17	49	40.83
20	Don't you find the shortage of infrastructure in your colleges?	11	9.17	109	90.83
	Total	**1217**	**60.85**	**1183**	**39.15**

Figure No: 1: Showing the overall level of using ICT among the faculty members in classroom transaction during the B.Ed. course of four B.Ed. colleges within the districts of Imphal West.
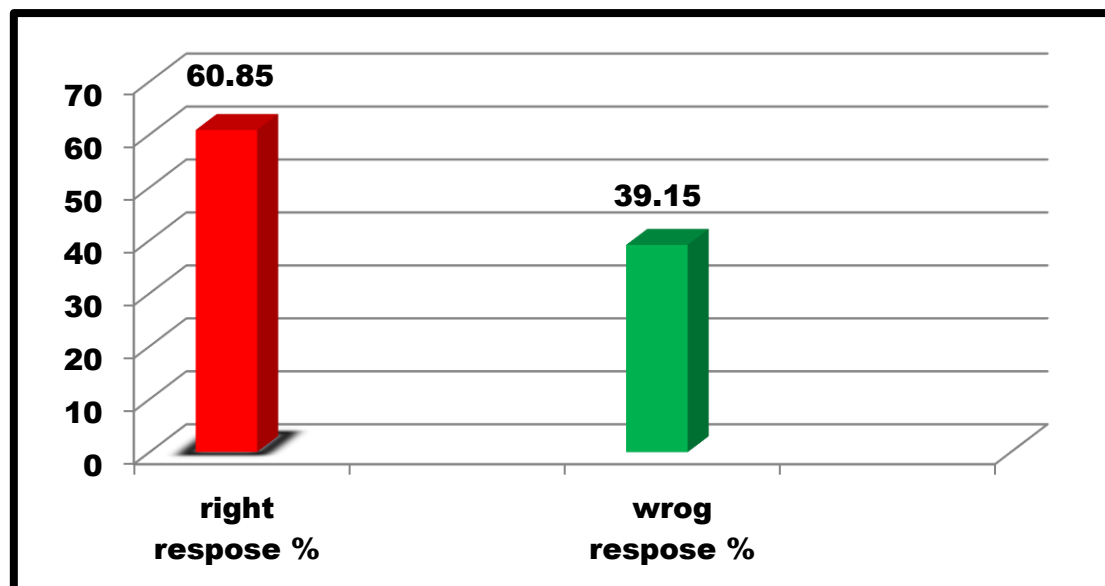
Interpretation:

1. 63 (60.85%) of the 120 student trainees of four colleges favoured availability of ICT lab at their respective colleges, whereas 57(39.15%) of the total students were against the ICT lab.

2. Only the 21(**17.50%)** out of 120 respondent agreed the size and number of computer in ICT lab and 99(82.5%) respondent was against it.

3. Only 35(**29.17%)** out of total respondents favoured that all computers are having internet and intranet facility, whereas 85(70.83%) respondents were against it.

4. 67(53.33%) student trainees agreed that faculty members use regularly ICT during classroom transaction, whereas 53(44.17%) student teachers were against it.

5. 64(53.33%) of the respondents agreed that Wi-Fi facility within the college campus to be assessable to teacher and students, whereas 56(46.66%) were against it.

6. 48(40%) of the respondents agreed that all classrooms of the colleges have smart classes whereas 72(60%) of the respondents were against it.

7. 28(23.33%) of the respondents agreed that there is standby electric generator to run ICT lab, whereas 92 (76.67%) was against it.

8. 50(41.67%) of the respondents agreed that the working hour of the ICT lab is reasonable whereas 70(58.33) of the respondents were against it.

9. Maximum of the respondents 112(93.33%) agreed that the use of smart phones are helpful in connection with B.Ed. trainee, whereas 8(6.67%) of the respondents were against it.

10. 57(47.50%) of the respondents opinion that there is disadvantages of using ICT in classroom transaction whereas 63(52.5%) were against it.

11. 50(41.67%) of the respondents favoured that there is no difference between male and female teachers in using ICT in the classroom transaction whereas 70(58.33%) of the respondents were against it.

12. 62(51.67%) of the respondents did not agreed that science student teacher are more familiar with ICT as compared to arts student teacher whereas 58(48.33%) were against it.

13. Maximum respondents 101(84.17%) agreed that the use ICT instruction in the classroom give better understanding the lesson among student teacher whereas 19(15.83%) were against it.

14. Maximum respondents 96(80%) agreed that attitude towards teaching has been improved because of using ICT whereas 24(20%) were against it.

15. 77(64.17) of the respondent opinion that the concerned subject teacher did not organised seminar and presentation among the trainees whereas 43(35.83%) were against it

16. Minimum respondents 37(30.83%) agreed that frequent projects are given to the trainees for improvement in using ICT whereas maximum respondents 83(69.17%) were against it.

17. Cent percent favour biometric attendance at all colleges.

18. 47(39.17%) of the respondents agreed that the institution has not ICT department for the teaching learning material development whereas maximum respondents 73(60.83%) disagreed.

19. 71(59.17%) of the respondents agreed that the subscription of e-journals were not find to assessable by the teacher as well as trainees whereas 49(40.83%) disagreed.

20. Minimum respondents 11(9.17%) opinion that there is no shortage of infrastructure in their college whereas maximum respondents 109(90.83%) opinion that there is shortage of infrastructure.

Conclusion: It can be concluded that there is high level of using ICT among the faculty members of B.Ed. Colleges within the district of Imphal East and West. It is therefore the **1st hypothesis "There is no significant level of using ICT among the faculty members in classroom transaction during the B.Ed. course"** is **rejected** as there is high level of using ICT among the faculty members at the percentage of 60.85%.

Objective: 2: To examine **the level of effectiveness in understanding the lesson using ICT in classroom transaction among the male and female Student Teachers Of four colleges within Imphal west District.**

Table No: 2: showing the level of effectiveness in understanding the lesson using ICT in classroom transaction among the male and female B.Ed. trainees of four colleges within Imphal west District.

Sl. No.	N	Sex	Mean	SD	SED	T- test	df
1	60	Male	10.241	2.252	0.4185	0.0627	118
2	60	Female	10.516	2.332			

@ Remark – Insignificant

INTERPRETATION: It can be observed from the above table No: 2 that the level of effectiveness in understanding the lesson using ICT in classroom transaction among the male and female of B. Ed trainees of four colleges are found to have mean score of 10.241 and 10.516 with standard deviation of 2.252 and 2.332.

The ratio of the two mean score comes out to be with standard error of 0.4185 which is less than the level of significance at 0.95. Therefore the second hypothesis of the study "There is no significant different level of effectiveness in understanding the lesson using ICT in classroom transaction among the male and female trainees" of the four B. Ed colleges is accepted as there is no difference between the level of effectiveness in understanding the lesson using ICT in classroom transaction among the male and female student teachers of these colleges. The level of effectiveness in understanding the lesson using ICT in classroom transaction among the male and female are found at the average of 10.241(17.06%) and 10.516 (17.60%).

Conclusion: It can be concluded that there is no significant difference   level of using ICT among the male and female trainees of B.Ed. Colleges within the district of Imphal East and West. It is therefore the **2ⁿᵈ   hypothesis "There is no significant different level of effectiveness in understanding the lesson using ICT in classroom transaction among the male and female trainees during the course"** is accepted as there is no difference between male and female understanding level.

Objective: 3: To examine **the level of effectiveness in understanding the lesson using ICT in classroom transaction among the Science and Arts B.Ed. trainees of four colleges within Imphal west District.**

Table No: 3: Showing the level of effectiveness in understanding the lesson using ICT in classroom transaction among the Science and Arts B.Ed. trainees of four colleges within Imphal west District.

Sl. No.	N	Sex	Mean	SD	SED	T- test	df
1	60	arts	10.567	2.290	0.412	0.475	118
2	60	science	10.133	2.232			

@ Remark – Insignificant

INTERPRETATION: It can be observed from the above table No: 4.3 that **level** of effectiveness in understanding the lesson using ICT in classroom transaction among the arts and science Student Teachers are found to have mean score of 10.567 and 10.133 with standard deviation of 2.290 and 2.232.

The ratio of the two mean score comes out to be with standard error of 0.412 which is larger than the level of significance at 0.95. Therefore the third hypothesis of the study "There is no significant difference between the level of understanding among arts and science trainees" of the four B. Ed colleges is accepted as there is no difference between the understanding level among arts and science student teachers of these colleges. The level of understanding among arts and science are found at the average of 10.567 (17.61%) and 10.133 (16.89%).
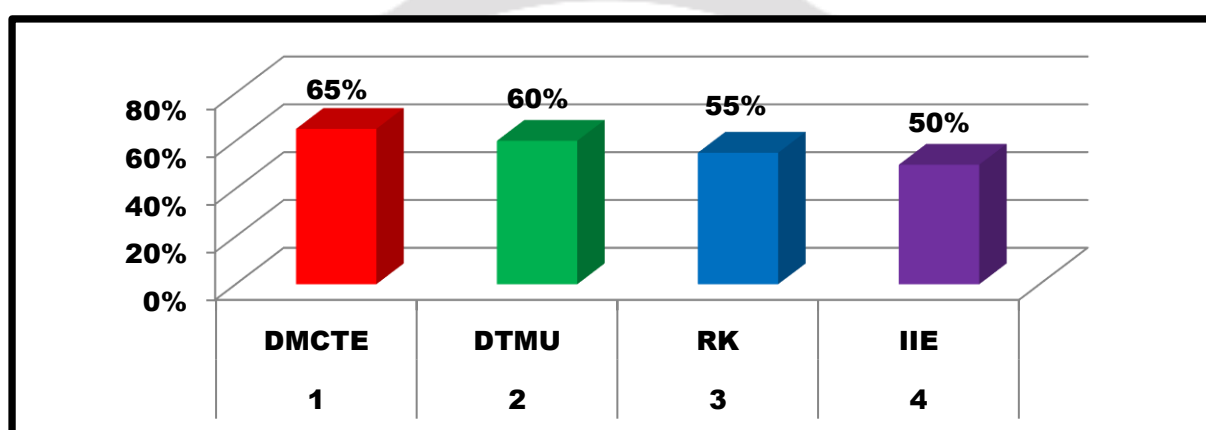
Conclusion: It can be concluded that there is no significant difference   level of using ICT among the arts and science trainees of B.Ed. Colleges within the district of Imphal East and West. It is therefore the **3ʳᵈ   hypothesis "There is no significant different level of effectiveness in understanding the lesson using ICT in classroom transaction among the arts and science trainees during the course"** is accepted as there is no difference between arts and science.

Objective: 4: To Examine the level of effectiveness in understanding the lesson using ICT in classroom transaction among the science and arts B.Ed. trainees of four colleges within Imphal west District.

Table No: 3: Showing the different levels of effectiveness in understanding the lesson by using the ICT in classroom transaction among different B.Ed. colleges.

SL	Name of college	Overall average score
1	DMCTE	65%
2	DTEMU	60%
3	RK	55%
4	IIE	50%

Figure No: 2: **Showing** the different levels of effectiveness in understanding the lesson by using the ICT in classroom transaction among different B.Ed. colleges.

Interpretation: The efficiency and effectiveness of using ICT among the four colleges has been checked. The result shows that The highest level of effectiveness is achieved y DMCTE y the percentage of 65% and the lowest is IIE(50%). According to the raking 1st is DMCTE (65), 2d is MU (60%), 3rd is RK(55) and the lowest is IIE(50%). So all the colleges does not have the same level of efficiency and effectiveness. The hypothesis is rejected as different colleges have different level of using ICT.

Conclusion: It can be concluded that there is significant difference   level of using ICT among the B.Ed. Colleges within the district of Imphal East and West. It is therefore the **4th hypothesis "There is no significant different level of effectiveness in understanding the lesson using ICT in classroom transaction among B.Ed. colleges"** is rejected as there is difference among B.Ed. colleges

MAIN FINDINGS OF THE STUDY:

1.   There is high level of using ICT among the faculty members of B.Ed. Colleges within the district of Imphal East and West. It is therefore the **1st hypothesis "There is no significant overall level of using ICT among the faculty members in classroom transaction during the B.Ed. course"** is rejected as there is high level of using ICT among the faculty members at the percentage of 60.85%.

2.   There is no significant difference   level of using ICT among the male and female trainees of B.Ed. Colleges within the district of Imphal East and West. It is therefore the **2nd hypothesis "There is no significant different level of effectiveness in understanding the lesson using ICT in classroom transaction among the male and female trainees during the course"** is accepted as there is no difference between male and female understanding level.

3. There is no significant difference   level of using ICT among the arts and science trainees of B.Ed. Colleges within the district of Imphal East and West. It is therefore the **3ʳᵈ   hypothesis "There is no significant different level of effectiveness in understanding the lesson using ICT in classroom transaction among the arts and science trainees during the course"** is accepted as there is no difference between arts and science.

4. There is significant difference level of using ICT among the B.Ed. Colleges within the district of Imphal East and West. It is therefore the **4ᵗʰ   hypothesis "There is no significant   different level of effectiveness in understanding the lesson using ICT in classroom transaction among B.ed. colleges"** is rejected as there is difference among B.Ed. colleges.

REMEDIAL MEASURES FOR FURTHER IMPROVEMENT:

1. The overall efficiency and effectiveness of using ICT among the faculty members during classroom transaction is found at 60.85 only. It is therefore this efficiency level should be increased in order to reach upto optimum level.

2. The improvement of the overall efficiency and effectiveness of using ICT among the faculty members during classroom transaction should be both in male and female teachers as there is no difference level of using ICT used by male and female teachers.

3. It is also clear that the improvement of using ICT in teaching learning process by teachers should be made among the teacher of both arts and science.

4. Infrastructural improvement as far as ICT lab should be made irrespective of government and private colleges as maximum of the college are facing shortage of ICT infrastructure.

5. Most of the college should try to increase the number of the computers in the labs.

6. All the computers available in the labs should have the facility of internet and intranet.

7. All the classes of all colleges should be smart class at the earliest as per NCTE and UGC norms.

8. All the colleges should install standby electric generator to run ICT labs.

9. The working hours of the ICT labs should be extended more so that students can access and get the facility more.

10.
    Proper training should be given among the teachers to use ICT inside the class efficiently.

11.
There should be ICT department in all colleges to prepare teaching learning material for the student community as well as teacher.

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