International Journal of Social Research and Development
www.socialsciencejournal.net
Online ISSN: 2664-8709, Print ISSN: 2664-8695
Received: 15-04-2024, Accepted: 09-05-2024, Published: 01-06-2024
Volume 6, Issue 1, 2024, Page No. 73-75

Criteria for selection of ICT resources for optimising learning

Monika Davar
Assistant Professor, Department of Education, Maharaja Surajmal Institute, Delhi, India

Abstract
The challenge being faced by teachers in the 21st century is the innumerable variety of resources available. Each ICT resource has its own features and capabilities. Teachers find it difficult to select the best ICT resource for teaching learning. Therefore, it becomes imperative to explore the criteria to be used by teachers for deciding which technology to use for optimal learning. This research aims to explore the innovative technological resources for the Indian education system and the criteria to be used by teachers for deciding which technology to use for maximum effectiveness of teaching learning. Teachers can select the appropriate resources for learners by considering availability and accessibility of the resource, infrastructural facilities available for its use, financial viability, competencies required for its use, utility in providing the relevant information and the time duration available for teaching.

Keywords: Criteria for selection, ICT resources, optimising learning

Introduction

The current disparity between the expected 21st-century ICT skills of today's youth and what our education system provides, highlights a critical need for selection and use of appropriate ICT for teaching. Also, this deficiency calls for educators to become acquainted with the latest ICT tools available and various criteria for selecting the appropriate ones to be incorporated into their teaching practices. Exploring innovative ICT technologies becomes essential in this context, particularly regarding their effectiveness within the Indian education system. This research aims to explore the contemporary technological resources for the Indian education system and the criteria to be used by teachers for deciding which technology to use for maximum effectiveness of teaching learning.

The challenge being faced by teachers is the innumerable variety of resources available. Each ICT resource has its own features and capabilities. The features which vary for different ICT resources include its size, cost factor, movement, colour, language, use of multimedia and engagement of learner. Various teaching learning activities require different type of lCT resources. Teachers find it difficult to select the best ICT resource for teaching learning. Therefore, it becomes imperative to explore the criteria to be used by teachers for deciding which technology to use for maximum effectiveness of teaching learning. If the criteria discussed for selection of ICT are used by teachers, it can empower teachers to enact significant changes in the education system, better aligning education with the technological demands of the 21st century.

Due to the advent of ICT, the following major shifts are being observed at global level:

Table 1: Changes in Learner's role

From	To
Inactive learner	Active learner
Recipient of Knowledge	Creator of Knowledge
Dependent Learner	Independent Learner
Technologically incompetent Learner	Technologically competent Learner

Table 2: Changes in Curricula & classroom practices

From	To
Cramming Facts	Conceptual Understanding
Teacher centred	Student centred
Fixed Time & Space (Rigidity)	Any Time & Anywhere (Flexibility)

The above changes can prove beneficial for Indian education system also, if awareness is provided to teachers regarding the multiple ICT resources available today and the criteria for their selection. This will be really helpful for the educators to incorporate ICT into their teaching. This study is a step in this direction.

ICT Based Resources

Following digital resources may be used by teachers for teaching learning:

1. Videos for introduction and explanation of concepts: Example- Many videos on You tube related to school content are available https://www.youtube.com/watch?v=3Dp5FAF084o
2. Tutorials to explain academic concepts: Example Khan Academy tutorials https://www.khanacademy.org/math/cc-kindergarten-math/cc-kindergarten-geometry
3. Virtual Labs for exploration and simulated experimentation:
4. Example https://www.pbs.org/wgbh/nova/labs/
5. Websites to update and enrich textbook content: Example
6. https://www.thesaurus.com/e/grammar/what-are-the-types-of-adjectives/
7. Educational games for teaching concepts in a joyful and interesting manner
8. Example https://www.educaplay.com/
9. Learning modules for remedial work and revision
10. Example https://www.scsthub.in/content/e-learning-module
11. Online Quizzes for evaluation
12. Example https://quizizz.com/?lng=en

13. PowerPoint presentations for introduction, explanation or summarization of the topic
14. Example- https://www.slideshare.net/slideshow/business-studies-project-marketing-management-class-12-cbse/239800610
15. Videoconferencing and audio conferencing for discussion with experts at
16. https://www.freeconferencecall.com/global/in/video-conferencing
17. Digital libraries and E-books for updated in-depth knowledge on a wide variety of topics- Example https://openlibrary.org/
18. Educational CDs and DVDs as teaching aids-Example https://zankareducationalcds.com/free-downloads/
19. Graphics and animation as teaching aids to clarify abstract concepts in an interesting way - Example https://www.pexels.com/search/videos/animation/
20. Collaboration resources such as wikis and Blogs for online collaborative activities and projects - Example https://www.blogger.com/about/?bpli=1

The ICT resources might also be prepared by the teacher. Videos, PowerPoint presentations, audio recordings, digital content, online quizzes prepared by teachers have the advantage of being customized according to need, level and interest of students.

Selecting the Appropriate Ict Material

The effectiveness of learning depends a lot on the decision regarding selection of the appropriate ICT material. This should be done taking into consideration the following factors:

1. Utility for teaching learning

This element focuses on two focal areas: learning objectives at the beginning of the teaching-learning process and identifying learning experiences based on given information. Bloom's Taxonomy divides learning objectives into three domains: cognitive, affective, and psycho-motor. To meet the intended learning outcomes (ILOs) in each of these categories and provide relevant learning experiences, teachers must choose relevant ICTs that are relevant to the content.

2. ICT Competencies of teachers and learners

The ICT teacher and students are human elements that are connected to the choosing of ICTs. When it comes to the teaching-learning process, a teacher needs to have knowledge and competencies to use ICT. In a similar vein, the learner element is very important while choosing an ICT. Students bring a set of learning capacities to the teaching-learning process. These include past knowledge on the specific topic and the fundamental cognitive abilities needed to interpret and comprehend the new information. The resource chosen should be in accordance with the competencies of teacher and students.

3. Availability and Accessibility

When a teacher chooses to utilise any kind of ICT for instruction, they should take into account its accessibility from both within and outside the classroom. There are learning resource centres in schools. Numerous ICT resources are available at these resource centres. It is the teacher's responsibility to ensure that the desired ICTs are present. If they are unavailable, they ought to look into the likelihood that they will be accessible outside of the organisation. A teacher may not always have access to all ICTs. In these circumstances, the instructor may search for a replacement.

4. Financial viability

For ICT selection, the affordability or the cost is an important factor. For instance, an teacher could rent or buy a video session or a printed document on teaching of chemistry for class 12th students based on the budget. Costs of ICT can be broken up into the following components:

- Capital costs are the upfront expenses an institution has to pay to set up a studio, create a computer network, or buy the technology they need.
- Production costs: These expenses are associated with creating instructional materials. The cost of production varies throughout educational resources.
- Recurring Costs: These expenses are necessary for ICT management and upkeep. For instance, because the equipment needs to be operated by the production crew, teleconferencing has a significant maintenance cost.
- Variable costs: These expenses are related to changes in the amount of ICTs used. For instance, the cost of the audio cassettes decreases with more user usage. While television has high fixed costs and low variable costs, audio cassettes and radios have low fixed and low variable costs.

5. Proper communication of Information

When choosing an ICT, effective communication is one of the crucial considerations. The ability of the chosen ICT to successfully convey the intended message or information must be considered before choosing any ICT. Using ICT in the teaching-learning process is pointless if it cannot properly convey the message. For instance, you may use a PowerPoint with a bar graph to illustrate education levels among girls across years. This data should be easily communicated using the PPT bar graph. As a result, the teacher needs to be cautious enough to ensure that ICT communicates well.

6. Availability of Infrastructure Facilities

Adequate infrastructural facilities are necessary for the use of ICTs in teaching and learning activities. Any designated area, such as an ICT room, where ICTs are to be utilised, should include infrastructure amenities such a table, chair, and an electric supply. In addition, safe and durable ICT should be selected that is compatible with the available equipment.

7. Availability of adequate time

Every lesson has a set period, which can be anything from thirty-five minutes to an hour. A teacher must consider how much time an ICT will take to use in order to give a better lesson before choosing any one. For instance, a teacher may set out 10 minutes of a 35-minute class time for the usage of a podcast on gender inequality. She can effectively employ the 10-minute podcast in his instruction. On the other hand, she wouldn't be able to present a two-hour documentary to the students at that point. Consequently, while choosing a lesson plan, the instructor must consider the time component.

Conclusion

There are a variety of free and open ICT resources available in the 21st century technological world which the teachers can use. These include virtual labs, audio recordings, video recordings, simulations, educational games, quizzes, learning modules, collaborative resources, websites, virtual libraries, graphics and animation. Teachers can select the appropriate resources for learners by considering the availability and accessibility of the resource, infrastructural facilities available for its use, financial viability, competencies required for its use, utility in providing the relevant information and the time duration available for teaching. This will enhance the effectiveness of teaching and optimise learning thus bridging the gap between the traditional teaching and contemporary ICT based approaches. It will lead to creating a new generation of learners with enhanced skills and competencies for being successful at global level.

References

1. Barfi Kwaku, Amenu Alexander, Arkorful Valentina. ICT Resources in Teaching and Learning in Selected Senior Secondary Schools in Cape Coast Metropolis. Library Philosophy and Practice, 2020, 4111.
2. Burbules NC, Callister TA. Watch IT: The risks and promises of information technologies for education. Boulder, CO: Westview, 2000.
3. Crawford R. The ICT teachers' handbook: Teaching, learning and managing ICT in the secondary school (2nd ed.). London, UK: Routledge, 2013.
4. Jonassen DH. Computers as mind tools for schools: Engaging critical thinking. Upper Saddle River, NJ: Prentice Hall, 2000.
5. Large A, Beheshti J. The Web as a classroom resource: Reactions from the users. Journal of the American Society for Information Science,2000:51(12):1069–1080
6. S Contreras Palma. Selection and use of ICT resources for teaching science. Study of high school teachers pedagogic-curricular beliefs and practices, edulearn14 proceedings, 2014, 278-286.
7. Singla M. Information and communication technology (ICT) in education. Egyankosh, 2017. Retrieved from https://www.egyankosh.ac.in/bitstream/123456789/46313/1/Unit-10.pdf