

Asynchronous and Synchronous: A Communication Process in Smart Classroom

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Abstract

Today our period is marked as the age of science and technology. There is no aspect of human civilization today where the influence of science and technology has not been felt. 'Education' is a very important field of human life. So very naturally and for good reason this technology is being used in many ways in the field of education. The overall education system is now re-emerged from the shackles of the traditional or continuous system. Where the role of teachers is now that of social engineering. Thus, technology means the science of searching for any art or skills. Technology is the application of scientific knowledge to a practical purpose (problem).” Synchronous and asynchronous communication tools are used to facilitate collaboration between individuals and groups of people, and are particularly useful for e-learning environments. Where Synchronous communication occurs in real time and can take place face-to-face, and as technology has evolved, can take place irrespective of distance (ex. Telephone conversations and instant messaging). And Asynchronous communication is not immediately received or responded to by those involved (ex. emails and message board forums which allow people to communicate on different schedules).

Keywords: Technology; Scientific Knowledge; Community; Synchronous; Asynchronous.

Introduction:

The twentieth century has seen a profound change in people's lives. And this change can be noticed at every stage of life. At the root of this change is the influence of modern science and technology. People today are living in comfortable homes, delaying death with life-saving drugs, making tremendous improvements in transportation and being able to make life as comfortable as it needs to be. So today we have to admit that it would not be possible to improve the quality of objects without the help of science and technology. For example, in ancient times people lived in mud houses. Today people live in mature and well-equipped homes. Science and technology have helped to make cement, iron rods, and other materials, making it possible to build so many

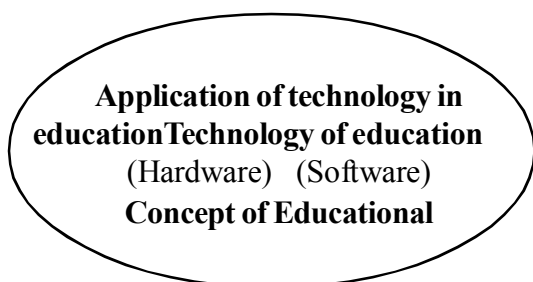
skyscrapers today. However, the contribution of science and technology is not less in terms of quality improvement, but also terms of quantitative excellence. The influence of technology can be seen in the production of anything.

Although the influence of science and technology has been felt in almost every sphere of human life, the methodological and strategic aspects of the formal education system remain in the pre-science era in many cases. Most teachers still rely on the 'Lecture Method' to rely on the ability to speak. Those who think this method is the best. So the teachers in different classrooms go on giving lectures by improving their verbal power. More surprisingly, even after receiving proper teaching training, the teachers get self-

satisfaction by following the ‘chalk and speech’ method. However, at present, many teachers and administrators have realized this flaw or incompleteness of the teaching method. They have thought of bringing a great change or revolution in the field of education by applying science and technology in the field of education. They argue is that while science and technology have been able to bring about a renaissance in all areas of life, why not in education.

Education technology is primarily thought to be a combination of two interpretations -

1. Technology in Education, &
2. The technology of education or the technology of learning to maximize results in the teaching-learning process.



Methodology

v Communication through Technology:

In the general sense, communication means to agree, perform, and exchange ideas, thoughts, or ideas. One can communicate with another - through speech or silence, through body language or gestures, through various facial expressions, through written words, songs, paintings and, other creative works. And this communication process has become more efficient and active with the help of modern technology.

However, human ability to communicate depends on several factors, such as -

1. Perception - It is necessary to realize that communication is not a one-way process. It is a two-way concept or process.
2. Appreciation of the principles of psychology - human nature, the nature of excitement, etc.
3. Thinking skills - linear thinking ability, creative ability, adaptive and analytical ability.
4. Expression skills - visual skills, creating graphics, creating software with ideas.
5. Media Skills - Ability to use a variety of audio-visual aids.

The impact of a communicator’s attitude towards technology today –

Attitude towards yourself	Attitude towards others	Comments about communication
(+)	(+)	A(++) person will communicate with great confidence, understanding, empathy and, optimism.
(+)	(-)	A (+ -) person can be self-centered, aggressive in communication.
(-)	(+)	One (- +) person lacks confidence and seeks the support of the other to see if he is doing well.
(-)	(-)	A (—) person can communicate of course, but without confidence and become pessimistic.

We have learned of several technological revolutions in the last century. The use of technology in agriculture or industry has been able to bring about a radical change in production and distribution around the world, as we know it. But another field of revolution has been organized in the twentieth century, and that is in the field of communication. In this context, a timetable for the emergence and development of information technology is given –

1. 1850 - Camera, photography.
2. 1876 – Telephone.
3. 1877 - Phonograph (entertainment-based).
4. 1885 – Radio.
5. 1920 - Audio recording
6. 1926 - Television (black and white).
7. 1948 – Transistors
8. 1954 - Color TV.
9. 1970 - Electronic calculator
10. 1971 - Digital watch.
11. 1974 - Electronic telephone
12. 1976 - Video games.
13. 1977 - Personal computer.
14. 1979 - Video disk, language translator.

However, at present, these means of information technology communication can be divided into two types, discussed below -

" Asynchronous Communication

Communication that doesn't need the audience to assemble at a given time to use it's referred to as Asynchronous Communication. Examples of asynchronous Communication are written materials, recording audio or videos, etc. In telecommunications, asynchronous communication is that the transmission of information, usually while not the utilization of an external clock signal, wherever information may be

transmitted intermittently instead of in a very steady stream. Any temporal arrangement needed to recover information from the communication symbols is encoded inside the symbols. The foremost vital side of asynchronous communication is that information isn't transmitted at regular intervals, therefore creating potential variable bit rate which the transmitter and receiver clock generators don't have to be compelled to be precisely synchronous all the time. In asynchronous transmission, information is shipped one computer memory unit at a time and every computer memory unit is preceded by a begin bit and stop bit.

Types of Asynchronous Communication

Mail and Package Delivery-



Many Institutions like that final contracts are personally signed by an authorized representative of every party to the agreement. If many signatures are needed, this could take weeks to urge all the signatures if the contracts are transferred by the postal services. If this method is holding up the beginning of the project, you'll be able to use a nightlong delivery service to reduce the time spent transferring the documents.



Fax- A telefacsimile or fax machine could be a device that scans any documents a slender band at a time changing them into tones that may be sent over traditional telephone lines to a receiving device that reproduces a fax precise duplicate of those documents. A fax machine generally a paper feeder that may be used for feeding multiple-page documents, a telephone keypad and handset, and a status display. Transmission rates of fax machines are generally restricted by the utilization of

traditional telephone lines. The information transmission uses the similar ways as a dial-up laptop or computer electronic equipment. A Group three fax machine could be a most data rate of 14.4 kilobits per second, However if the phone connection is poor, it'll drop down to lower speeds automatically till it will establish a reliable connection between machines.

The Group three fax machine digitizes information in a very type that's compatible with computers and also the fax operate is commonly integrated with others computer functions. A multifunction device,

will scan a document and save it as a picture or photograph, send it as a fax, or print multiple copies. Fax machines are around a long time and enjoy a high level of trust for transmittal documents accurately or reliable. In several countries, a fax of a signed contract is legal, however a computer-scanned image isn't.



Electronic mail- Electronic mail or E-mail is wide accustomed coordinative comes and to speak between team members and lots of peoples. Its many valuable characteristics for project management of any company and also academic purposes:

- Copies may be sent to any or all list of team members.
- A preconference-call e-mail will list the agenda things of the conference call.
- A post-conference e-mail will summarize the results of the discussion on every topic.

- Messages may be saved to document the method just in case of a misunderstanding or miscommunication.
- Message saved for several years or times.
- Files may be attached and distributed.



Project Log and Weblog (Blog) - A Weblog is often referred to as a journal. It's a web journal that may be personal, shares by invite, or created accessible to the planet. Some project managers or academic institutions keep a journal within which they summarize the day's challenges and triumphs and also the selections they created. They come to the current journal at a later date to review their decision-making method when the results of these decisions are known to see if they will learn from their mistakes. Many decisions in project management are created with incomplete data, and reflective on previous selections to develop this decision-making skill is very important to growth as a project manager.

Real Simple Syndication (RSS) -

Some projects are directly stricken by external factors like political elections, economic trends, company mergers, technological or scientific breakthroughs, and weather. To stay sophisticated regarding these factors, you'll be able to subscribe on-line news sources. A technique that facilitates this process is Real Simple Syndication (RSS). To use an RSS feed, team members transfer a free newsreader on the Internet. Web pages with RSS news feeds have tagged links. If the user clicks on the RSS feed, news from the online website is automatically sent to the user's newsreader. The newsreader may

be set to filters the news for keywords to limit the stories to people who are relevant to the project.

Importance and Benefits in Classroom:

There are several advantages to learning through asynchronous communication tools are important, which are mentioned below:

- **Individual Pacing:** By definition, learning through asynchronous communication tools permits students to designs their learning schedules. This enables learners to pay longer time on difficult areas and works toward mastery rather than deadlines obligatory from higher than. Individual pacing helps addresstotally different learning designs furthermore as learning disabilities.

- **Asynchronous Collaboration:** Employing a discussion board and interactive document editing can help students engage more deeply with the materials as they communicate with one another. Asynchronous collaboration permits students to achieve out for facilitate after they would like it and to work with the materials as long as needed before sharing their thoughts with others, leading to a richer, more personalized experience overall.
- **Portfolio Learning:** As a result of students do not essentially sit for one examination, learning assessment through asynchronous communication tools is commonly comprised of a portfolio of materials demonstrating mastery. At its best, a web learning portfolio will contain a rich assortment of videos, presentations, and alternative multimedia system comes that show what has been learned in a very lot of deeper way than a standardized test, and these come will follow students through their educational careers and into the real world.

Synchronous Communication

The word synchronous means working together at the same time. In the online learning world, chat rooms and on-line conference are good examples of synchronous communication. In a very chat area, people's comments to every alternative area unit relayed forthwith, enabling a period of time discourse. Similarly, online conferencing with the benefits of voice over Internet Protocol (VOIP) tools enable real-time conversations to take place online. Learning from synchronous communication is much enhanced because real-time conversations allow people to explore, through writing or talking, the class concepts. The act of verbalizing helps students build bridges between completely different concepts and ideas, therefore serving to them retain data a lot of effectively. Synchronous communication happens in real-time, where at least two individuals are exchanging concepts, information, at the same time with each other.

That's to not say that you just ought to be human activity face to face for this to be deemed synchronous communication. This kind of communication may be virtual additionally, either regular or a bit a lot of impromptu. Some Examples of synchronous communication are in-person meetings, Phone calls, Video conference/ virtual meetings (i.e., via Google Meet, Zoom, WebEx, Slack, etc), Asking the teammate across your desk a quick question, Coffee break conversations, etc.

Types of Synchronous Communication

If all the senders or receivers of the communication are taking part in the exchange at the same time, so the communication is called synchronous. A telephonic phone call is an associated example of synchronous communication. But, when the participants are not interacting at the same time, the communication is not synchronous, or asynchronous. The Examples of synchronous communications below -

Live meeting: Live meeting is a type of synchronous communication. Where present of team members at the same location for their discussions. Here everyone communicates with each other. The Live meeting have several platforms, such as Google Meet, Windows Live, Zoom, WebEx, Slack, etc.

Audio conference: A telephone call between two people or a conference call where many people participate.

Computer Assisted Conference: Computer Assisted Conference also is a type of synchronous communication. Where audio conference with a connection between computers that can display a document or spreadsheet that can be edited by both parties.

Video Conference

Video conferencing similar to an audio conference but with live images of the participants.

Some laptops and computers have built-in cameras to facilitate video conferencing. And make interacting easily and effectively anytime and from anywhere.

IM or Instant Messaging: Instant Messaging is also effective through texts. Where the exchange of texts or voice messages using pop-up windows on the participants' computer screens. There are many examples for Instant Messaging today. Like –WhatsApp, Twitter, Facebook, Skype, etc.

Texting: exchange of text messages that are 160 characters or fewer between mobile phones, pagers, or personal digital assistants (PDA)- devices that hold a calendar, a contact list, and other support programs.

- **Importance and Benefits in Classroom**

- Real-time resolutions: A recent article highlights the advantage of synchronous communications is using this real-time online communication is going to save your time waiting for a response and therefore your productivity won't be delayed expecting a team member to induce back to you.

- **Focus on a personal connection**

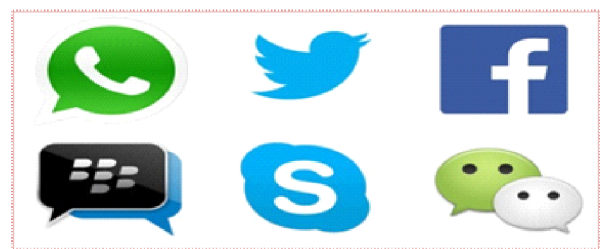
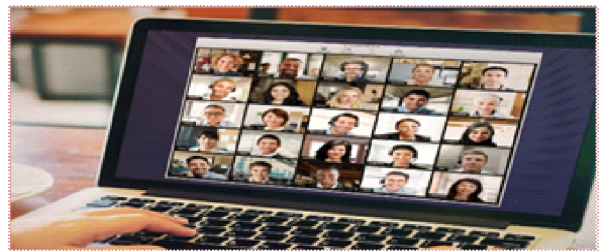
How we communicate is important. Think about going into these discussions openly, politely, and respectfully to build the strongest relationships with your team members.

- **Identify the right instances to use synchronous communication**

It is the right time to engage in synchronous communication if you need an immediate response, if it is going to be a short, less complex discussion, and if you have a clear objective in mind for this conversations.

- **In-depth interaction**

Synchronous communications administer the opportunity for more in-depth interactions. Have faith in conferences wherever you'll use live discussions to brainstorm or solve issues, one thing that



wouldn't be attainable in Associate in asynchronous environment. You can even record the discussions or team meetings and share them with your team later if they were unable to attend for any cause.

- **Ask for instant feedback** Instant feedback can be asking if right now is a good time to talk, ask if your co-worker or counterpart thinks the matter is urgent, or if they are the right person to be chatting with.

Barriers to Using For Some Students:

- **Less spontaneous brainstorming** Asynchronous communication takes away some of the spontaneity and creative genius that can come from students bouncing ideas off each other in real-time.
- **Feelings of isolation** The lack of face-to-face meetings or real-time connections can make some students feel isolated or very lonely.
- **Responses take time** Communicating asynchronously can be tough for work that requires immediate action, especially if some students are waiting hours or days for replies.
- **Lack of connection** As succinct as written communication can be, it doesn't always convey the emotion and tone needed for students to feel connected.

- **Time zone differences** With people working all over the world, it becomes increasingly difficult to find overlapping hours to meet in real-time. Particularly if you've got a worldwide force, some workers could also be needed to fulfill throughout non-working hours, which may negatively have an effect on their work-life balance.

- **Less productivity and more stress**

When students feel that they have to respond to every form of synchronous communication that comes their way as soon as they get it, they lose those uninterrupted chunks of your time necessary for deep, substantive work.

Conclusion

Technology based learning is very effective in modern days. Where we used each and every situation live with. Learning is a one of the major area where ICT based teaching-learning technique are used. But sometime in a very much students cannot effort this technology based instrument due to economic problem especially in our country. But the institution must be organized technology based teaching for effective learning.

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