



Communication tools between learning activities and e-learning

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Abstract. Effective communication is essential to any learning or leisure activity. It is also vital to all types of education, from classes to work or recreational activities. Effective communication between teachers and learners helps both parties improve their respective skills. When learners and teachers use traditional learning methods, it is difficult to communicate effectively with each other because of the heavy reliance on memorization. In e-learning, teachers can choose between synchronous and asynchronous methods. Asynchronous methods allow for later communication, while real-time or synchronous methods allow for in-process communication. The choice of communication tools associated with the training modules will depend on the learning activities that teachers wish to implement. It is important to take into account the needs and expectations of learners so that they are satisfied with their learning experience. Thus, different tools can be put in place to meet their specific needs. In this context, we propose to present different communication tools to design online training tailored to the learners' needs, according to the different learning activities.

Keywords: Communication tools, learning activities, e-learning.

1 Introduction

With advances in technology, communication tools between learning activities and e-learning are becoming increasingly important. Communication tools enable real-time interaction between teachers and learners and provide faster and more effective ways of teaching and learning. Communication tools include instant messaging, forums, chat rooms, emails, blogs, wikis, webinars, and course management systems.

These tools offer multiple possibilities to facilitate interaction and collaboration between teachers, learners, and other stakeholders. They include web-based systems, chat rooms, blogs, wikis, and webinars. The use of these tools can help to enhance the educational experience by providing learners with a real-time interactive platform to engage in constructive dialogue with their peers and teachers. They can also provide teachers with an effective way to monitor and evaluate learners' progress and creativity. In addition, the use of these tools reduces the costs and time associated with traditional classroom teaching activities.

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As well as providing a platform for learners to interact and collaborate, these tools can also be used to facilitate the sharing of resources such as videos, images, and documents. This can help to enhance the learning environment by allowing learners to access material from around the world. In addition, the use of these tools can help to improve the quality of teaching by providing teachers with a more effective means of monitoring and assessing learners' performance. Overall, the use of communication tools to facilitate teaching activities and e-learning is an important element of the modern educational landscape.

E-learning is no longer a peripheral activity, the province of an isolated enthusiast, but permeates higher education (HE) not only as an effective infrastructure for distance learning, but also as a complement to the more traditional method of learning on campus. In fact, (Carr-Chellman & Duchastel, 2000) even speak of the "new online paradigm that is less about distance education and more about the provision of resources, learning activities, and instructional activities to learners." In fact, the context is a potentially rich learning environment, "learners are often engaged in multiple activities to achieve multiple learning objectives, while teachers play the role of coach and facilitator." (Wilson, 1996).

2 E-learning

E-learning has undergone many developments. Although definitions and approaches vary, current literature defines it as a mode that occurs primarily in a virtual learning (VL) environment, via the Internet and with active use of digital devices (Anderson & Rivera-Vargas, 2020; Bates, 2019; Lee, 2019). Its emergence and consolidation should be understood not only as an evolution of traditional distance education, but also as one that is able to respond to a technology-laden world (Lee, 2019) and a networked and interconnected society.

Online learning has also championed its role as an inclusive educational model that facilitates access to higher education and the development of digital skills. Research works such as (Sangrà et al., 2012; Al-Samraie et al., 2017) show that the active use of electronic and digital media and devices in online education can promote access, development and quality of education. In addition to formal education, (Chu, 2010; Anderson & Rivera-Vargas, 2020) argue that online education uses the same virtual environment to provide and standardize students' technological and digital skills. This reduces potential digital divides across multiple intersecting dimensions, including social class, physical disability, geographic location, and age (Chu, 2010).

It is important to note that these features of online learning have coexisted for years with opposing critical views, with some questioning their effectiveness in the real world, rather than their overall conceptualization. For example, these critiques highlight the limitations of mediated human contact and the need for students to have high levels of personal motivation to succeed (Anderson & Rivera-Vargas, 2020). A problem also arises when the design of virtual environments and learning activities is limited to the organization and distribution of electronic resources (e.g., online course delivery) rather than ecological support based on active learning (Davis et al., 2018).

In this sense, one of the most studied and relevant aspects of the online teaching experience is the effort to increase student engagement in the educational process

through self-directed learning, effective use of digital tools, and positive interactive relationships between students and instructors. (Palloff & Pratt, 2013) and (Pilkington, 2018) emphasized the importance of helping students achieve autonomy and self-regulation in order to motivate them and thus enrich their educational experience.

In e-learning, there are five types of learning, such as collaborative e-learning, game-based e-learning, adaptive e-learning, self-directed e-learning and blended e-learning. The term blended learning simply takes two or more different types of things, which can then be mixed together. They argue that the breadth of interpretation means that almost anything can be considered blended learning. (Driscoll, 2002) also argues that blended learning comes in many forms, such as web-based technology models, teaching methods, a combination of instructional technology and hands-on work tasks. However, she believes that the appeal of blended learning is that it means different things to different people, illustrating the untapped potential of blended learning, despite the fact that the debate and theory development on what constitutes blended learning peaked a decade ago (e.g., Driscoll, 2002 ; Garrison & Kanuka, 2004) researcher and practitioner interest in blended learning remains high.

According to (Ouariach & Khaldi, 2021) blended learning is a new approach to systematically and strategically integrate ICT learning tools into university courses, combining the possibilities of online training and classroom technology to improve learning effectiveness.

3 Communication tools

In general, this section details some of the synchronous and asynchronous communication tools that can be used to create a comprehensive and rich learning experience. Synchronization tools often allow for real-time communication and collaboration in a 'same time - remote' model. These tools can involve people in different locations simultaneously. The main disadvantage of synchronous tools is that, by definition, they must participate at the same time. Time zone differences and scheduling conflicts can create communication and presentation problems. In addition, they are expensive and can require a lot of bandwidth to be effective.

3.1 Synchronous tools

A synchronous tool is an online communication tool that allows real-time interaction between users. Synchronous tools are used in e-learning to allow learners and teachers to connect and communicate in real-time via chat, video conferencing, or audio conferencing. Table 1 below describes some of the tools available in synchronous technologies.

Tools	Usability	Disadvantages
Video conferencing	Real-time interaction that simulates a traditional classroom.	High cost and quality depend on bandwidth.
Chat	Text and graphic capabilities are available for sharing low-complexity information.	Texting slows down communication most of the time.

Instant messaging	Instant delivery of information such as important notifications.	Requires specific equipment, such as a mobile phone.
Online meetings	Allows sharing of presentations, documents, and application demonstrations.	Quality depends on bandwidth, sometimes works well for audio conferences.
Sharing of applications	Demonstration and co-development of documentation.	Bandwidth-based, sometimes effective for audio conferencing.

Table 1. The different synchronous tools (Obasa et al., 2013).

2.2 Asynchronous tools

An asynchronous tool is an online communication tool that allows for delayed interaction between users, i.e., participants do not communicate in real-time. Asynchronous tools are used in e-learning to allow learners and teachers to collaborate and exchange information without being online at the same time, such as discussion forums, e-mails, blogs, wikis, etc. Table 2 below describes some of the tools available in asynchronous technologies.

Tools	Usability	Disadvantages
Forums	Collaborating and sharing ideas over time. Brainstorming method.	It may take longer to make a decision or reach a conclusion.
Web Journals (Blogs)	Dissemination of ideas and comments.	May take longer to reach decisions or conclusions.
Messaging (e-mail)	Distribute course materials on an individual or group basis.	Difficulty in responding to emails immediately, especially with large classes.
Surveys and polls	Evaluate educational trends and performance.	Requires clear definition and adequate coordination.
Wikis	Online collaboration allows users to create, edit and share web pages collaboratively.	Adding or changing content allows for quick and easy collaboration, but can also lead to content quality issues. It is important to monitor content to ensure that it is accurate, consistent, and relevant.
Link to website	Direct users to additional resources and reference material.	Moving network resources may result in the unavailability of the pointed resource.
Document libraries	Tracking learning resources.	Good management of storage media is essential.

Table 2 The different asynchronous tools (Obasa et al., 2013).

4 Learning activities

E-learning has become a popular way for learners to receive distance learning. E-learning activities can include live lessons, recorded videos, group discussions, and interactive exercises. For these activities to be effective, it is important to have clear and reliable communication tools between teachers and learners.

Some of the most commonly used communication tools for e-learning activities are:

- Online course platforms: Canvas, Blackboard, Moodle, and other online course platforms provide a centralized space for online learning activities. Teachers can post announcements, files, and events here, and learners can submit assignments and participate in group discussions.
- Instant messaging: Instant messaging tools, such as Slack and Microsoft Teams, allowing teachers and learners to chat in real time. They can be used for group discussions or one-on-one conversations between learners and teachers.
- Online meetings - Zoom, Google Meet, and other online meetings allow teachers and learners to conduct live classes. Learners can ask questions in real-time and participate in group discussions.
- Forum: The forum can be used for group discussions on specific topics. Teachers can post questions to generate discussion, and learners can respond and debate on their own.

The learning process generally consists of four stages: situation, conceptualization, objectification, and transfer (Maha et al., 2021).

1) Situation: In the setting in situation phase, learners prepare to learn by seeking information and becoming familiar with the learning objectives. They can also familiarize themselves with the activities and resources they will use during their studies.

2) Conceptualization (Structuring): In the conceptualization stage, information and knowledge are presented to learners. This can be done through live lectures, recorded videos, readings, and presentations.

3) Objectification: During the objectification stage, learners apply what they have learned through interactive exercises, projects, and hands-on activities. This allows them to develop their understanding and reinforce their knowledge.

4) Transfer: During the transfer phase, learners are assessed on their understanding and application of what they have learned. This can be done through exams, assignments, and projects. Transfer helps to measure progress and identify areas for further reinforcement.

These four stages complement each other and are important for effective and sustainable learning. Teachers can use different tools and technologies to support each stage of the learning process and help learners achieve their learning goals.

For each stage of the learning process, different communication tools can be used to support learning:

1) Situation:

- Forums: allows users to share information, ask questions, and discuss topics of interest.
- Online course platform: familiarizes learners with learning objectives and upcoming activities.

- Social Learning Network: Allows learners to connect with other students and teachers to discuss topics and ask questions.
- 2) Conceptualization:
- Webinars: allows teachers to present information and knowledge in an interactive way.
 - Recorded video: allows learners to review lessons and presentations at their own pace.
 - eBooks: allows learners to access information and knowledge in one place.
 - Chat: allows users to interact with each other instantly in real-time and enable real-time collaboration and increase user satisfaction with a platform.
- 3) Objectification:
- Educational game platform: allows learners to practice what they have learned in an interactive and fun way.
 - Group projects: Have learners work together and practice what they have learned.
 - Online Assessment: allows learners to measure their understanding and application of what they have learned.
- 4) Transfer:
- Forums: allows platform members to communicate and connect with each other. This can encourage social interaction and help build community.
 - Online tests: allow teachers to assess learners' knowledge in a formal way.
 - Homework and assignments: Allow learners to demonstrate what they have learned by completing hands-on activities.
 - Online Feedback: Allows teachers to provide constructive feedback on learners' work to help them improve their skills.

It is important to note that the most appropriate communication tool depends on the particular circumstances of each teaching and learner. Teachers can select and use the most relevant tools to effectively support the learners' learning process.

Conclusion

Learner communication and collaboration tools are an important part of instructional activities as well as online and blended learning. These tools allow learners to share their knowledge, experiences and ideas, creating an enriching and motivating atmosphere where everyone can learn and grow within the group. These tools also allow learners to interact with their peers and teachers in real time, making them valuable learning tools. Online communication and collaboration tools are essential for educational activities as well as for online and blended learning. They can also be used to organize online learning activities and assessments. Communication tools are so important to online teaching that they have become an essential part of academic life.

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