

Webinars in higher education: use and misuse

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Abstract

Web meetings have recently become a common tool for eLearning in higher education. But what are they used for? How well do they work? How do they fit into the pedagogical context? In this paper, the wider context of social and technological change over recent years is discussed and, in this light, the (mis)use of webinars to recreate traditional classroom dynamics online is held up to criticism. Possible future educational fits for this technology are indicated.

Keywords. Webinar, interactive, web conference, eLearning, online, pedagogy, higher education

1 Webinars and their uses

A webinar (web + seminar) is a web conference, that is, a synchronous meeting of 2 or more participants over the internet, using various communication tools. It is usually distinguished from a video conference by the availability of extra tools, over and above web camera and audio channels.¹ The main tools used in webinars are:

- web camera video link
- microphone and headset audio link
- text chat
- slide presentations
- whiteboard presentations
- application and screen sharing
- lockstep web browsing
- configurable moderator and participant profiles
- voting
- adjustable screen layout
- pre-loading of content

¹ In this paper we use “webinar” as a synonym of “interactive online meeting”, rather than, as sometimes used, to refer to an online presentation with audio and slides.

- scheduled sessions
- guest participant links
- integration with existing internet user platforms (LDAP, Moodle, etc.)
- session recording and export in video format
- dial-in telephone audio alternative

The maturity of a range of technologies, including high internet bandwidth communication, cheap multimedia computers and handheld devices, rich multimedia programming environments (Java, Flash, HTML5, etc.) holds out the promise of webinars that are:

- simple to set up and use
- stable
- cheap for organisations and end-users
- multi-platform and multi-device
- of high enough quality (sound, video, low timelag)
- scalable (in terms of the sophistication of the tools and the number of users)

In short, web conferencing is becoming, like other Internet applications we already know, such as e-mail and web pages, a utility: a quality, on demand service available at a decreasing cost in all contexts. There are currently hundreds of systems on the market, with a perplexing array of architectures and technologies. There are also various good review and comparison sites [1,2].

The technology has a variety of possible uses:

- (a) interactive international project or management meetings, without the need for participants to travel
- (b) pre-sales marketing and after-sales training in the use of software
- (c) online lectures and streaming of live events
- (d) online training and workshops

Let us consider these use scenarios in turn.

1.1 Online web meetings

The advantages of using web conferencing software for online meetings are self-evident. Many meetings of this kind can function sufficiently well with video conferencing tools, that is, merely audio and video (webcam), but with webinars the possibility of incorporating a slide presentation may be a valuable asset. Nonetheless, online meetings lack the opportunities for informal interaction and networking that are available in and around traditional face-to-face meetings: coffee breaks, corridor encounters, lunches, etc.

1.2 Pre-sales marketing and after-sales training

This is another well-consolidated use of web conferencing tools. Slide presentations and, in particular, desktop screen-sharing allow the instructor/sales representative to work through live demonstrations in tandem with clients, converting the online environment into a kind of shared digital laboratory.

1.3 Streaming of live events

Streaming of live events does not require web conferencing software. Live events can be effectively streamed via services such as LiveStream [3], Ustream [4] or Google Hangouts On Air [5], with Twitter used as a back channel for audience questions and comments [6]. In this kind of asymmetric disposition, transmission of video and audio is from one-to-many. Recording of events for subsequent on-demand transmission is a similar scenario, for which web conferencing software is not required.

1.4 Online training and workshops (eLearning)

This scenario is the central case discussed in this paper. Web conferencing solutions are often marketed as an exciting new technology for improving the quality of online training, the missing piece of the jigsaw that will allow educators to overcome the physical separation of online participants.

According to the blurb of one of the leading commercial hosted web conferencing products, “Adobe Connect for eLearning provides a complete solution for rapid training and mobile learning, enabling rapid deployment of training accessible from anywhere, anytime, on virtually any device—leveraging industry-leading content authoring tools, rich learner registration capabilities, and powerful learner management and tracking tools.

With Adobe Connect for eLearning, you can:

- Rapidly create and deploy engaging courses and content
- Maximize training attendance with powerful onboarding tools and reminders
- Enable mobile learning with instant access to training from virtually any device
- Deliver immersive experiences in live and on-demand classes
- Efficiently manage and track training
- Easily integrate with third-party systems”

We will take a critical look at this training scenario, seeking to understand how the new technology aligns with the overall educational approach and other constraints of the context of higher education.

2 Webinars for eLearning

Only a generation ago educators and students worked in distance education schemes without synchronous communication other than the telephone, which was too limited in functionality and too expensive to use extensively in educational activities. Reading lists were sent out. Exercises and essays were posted back. In some cases imaginative extra communication channels were used, such as in the Open University in the United Kingdom, where course materials were for many years supplemented by late night television broadcasts [7].

The lack of direct contact between students and teachers was certainly experienced as a drawback. Isolation over many weeks could be offset by intensive residential modules, for example, during the holiday period, but there was a feeling that the distance learning educational context was not particularly conducive to successful learning. But “needs must” and the demand for distance education remained high because, along with night school and summer school, for many students it was the only way of gaining access to higher education at all.

In this context, the main deficit was the lack of synchronous communication among participants and also with teachers. Activities such as lectures and seminars, which were the backbone of on-campus courses had no equivalent in the distance learning context. There was, therefore, great interest in emerging technology that might plug the gap.

Real-time text chat (IRC) started to be used in the 1980s. More user-friendly web-based text chat appeared in the 1990s. By the turn of the millennium the first web conferencing services had started to appear, though they were costly operating system-specific programs without real interactive functionality and the Internet itself was insufficiently developed to provide a viable infrastructure for these services [8].

Over the last ten years many of these shortcomings have been overcome and web conferencing that is low-cost or free, multi-platform, web-based, ubiquitous and on-demand is now becoming a reality. Services use a variety of architectures: hosted services, point-to-point and programs that can be installed on the user's own server. Google Hangout, among others, provides a rudimentary but attractive hosted service of this kind for free. As already mentioned, there are hundreds of proprietary systems on the market, all of them promising rich interactive web meetings.

It would thus seem that distance learning has finally entered its age of maturity, now rebranded as eLearning. Busy, on-the-move students and teachers can at last meet online and communicate effectively in a way that lacks little or nothing in comparison to traditional classroom teaching and learning.

And yet all is not as it seems, for a variety of reasons. Technical problems lead to what we have called the “NASA effect”. Another obstacle has to do with personal contextual factors that affect student involvement. Furthermore, while this technology has been under development, the general social and educational context has

experienced a period of remarkable change. We consider these factors in more detail below.

2.1 Technical limitations: the NASA effect

Technical hitches for users lead to what we have called the NASA effect, referring to an inferior user experience of web conferencing tools. What is promised as an easy-to-set-up, stable, comfortable, interactive session all too often turns out to be difficult to set up, precarious and stressful. Commonly reported problems include:

- poor sound quality (causing discomfort and headaches)
- time lags in reception of audio and video
- full session crashes or disconnections of individual participants
- incompatibilities with specific operating systems, software libraries and browsers
- user disorientation in the face of multiple on-screen panels

Even when the system works well there may be technical limitations that become obstacles to learning. In reality, participants and educators cannot really do everything in an online meeting that they can do in a face-to-face meeting. Some actions that are difficult to do online are:

- for the teacher to gauge the degree of comprehension by students of the explanations offered
- for many different participants to have their microphone open at the same time
- to display certain kinds of artefact (there may be restrictions on file formats)
- for the teacher to notice that a student wishes to intervene or ask a question

There are other actions, easy to do in a traditional classroom, that are impossible to do online. For example,

- to watch a video in lockstep, pausing and commenting as may be required
- to change the focus of attention fast and repeatedly
- to attract the attention of a participant that is distracted
- to help a student participate in the session when because of some unidentified technical impediment they cannot connect properly

These difficulties, and the perception of taking part in a precarious act of communication, taken together comprise the “NASA effect”, in allusion to the blurry images and broken audio of communications retransmitted to an eager public from the first moon expeditions. On a number of occasions we have witnessed the abandonment of educational webinars already in progress because of the technical difficulties experienced by participants.

All in all, if the impediments we have described above are widely experienced, both teachers and students will ultimately reject web conferencing as a viable opportunity for eLearning.

2.2 Students' circumstances: the need for asynchronicity

Among the reasons for students choosing to take part in online training programmes is the opportunity they provide to study in a way that is compatible with their own constraints of time and place. eLearning provides them with the chance to study when they want from where they are, without the need to adapt to on-campus institutional circumstances [9].

The organisation of synchronous meetings, however, undermines the timetabling flexibility of online studies. If students are in different circumstances, and even in different time zones, attendance at online meetings may be impossible for them. As a result, webinar sessions that might innocently be envisaged as creating added value for online instruction may well turn out to be a false asset. The organisation of obligatory online meetings runs counter to the ethos and opportunity of online training.

These two factors, precarious communication channels and individual time constraints, are significant drawbacks but meanwhile there is another dimension in higher education that may undermine the advantages of using webinars for eLearning: the changing context of higher education.

3 The changing context of higher education

Education, like all other fields of human activity, has been profoundly influenced by technological innovation over the past 30 years. On-demand access to all kinds of information, new ubiquitous channels of communication and professional use of digital technology in the workplace, even in the smallest enterprises, have transformed the economic and social context we live in, and given us tools to use in this frenzied new world. (Will the low cost of digital tools, in comparison to other kinds of property, lead to social inclusion?)

Work and business are faster, more flexible, more competitive, more global and faster changing than ever before. As productive citizens, we need to be able to operate comfortably and effectively in this new environment, which higher education is embedded in and, as far as education is concerned, the effects are potentially far-reaching.

3.1 Access to information

Before the Internet age, access to specialised knowledge was one of the main reasons for enrolling for higher education. University teachers are, by definition, experts in their area of knowledge and university libraries were the gatekeepers to specialist journals. Access to information was a privilege largely reserved for on-campus students in traditional classrooms.

Nowadays, through the World Wide Web, specialised information in all fields of knowledge circulates freely, particularly if you are prepared to read in English. Innovative practices in the field of copyright have made a large and growing body of knowledge available to all, without cost to the user.

It is hard to overstate the change that ubiquitous access to information has brought about. Before the Internet age, specialists were under constant pressure to acquire books and photocopy materials of potential interest. People would buy or copy materials of potential future interest to them, just in case. Academic bookshelves groaned under the weight of dictionaries and multi-volume encyclopedias, alongside manuals and guides of all kinds. (In some cases they still do.) But since the advent of the so-called Information Society, books are no longer the gold standard of access to knowledge and in many cases can be dispensed with altogether. It is usually enough to have a web browser and Internet access in order to be able to consult relevant up-to-date documents on any issue, anywhere, at any time.

3.2 Online communication

Previously, peers and teachers only communicated directly in face-to-face encounters. All traditional training activities were of this kind: lectures, seminars, tutorial groups, etc. Those unable to attend on-campus sessions were deprived, almost totally, of opportunities for both formal and spontaneous and informal interaction with their peers and teachers.

Now the Internet and the World Wide Web have given us many new communication channels: email, messaging, chatting, blogging, tweeting. If you are prepared to overcome initial resistance to these new forms of interaction, you have many opportunities to maintain contact with peers, colleagues, teachers, contacts, friends, etc., online despite the physical separation.

The increasing use of new types of digital communication has brought about the demise of traditional analogic systems of interaction, such as letter writing, faxing, photocopying, and has vastly enhanced our ability to reproduce, copy and communicate through a variety of digital media, including photos and videos. The enormous rise in independent domestic digital production and consumption has decimated economic sectors that were, for a short period, at the forefront of new

technology, such as high street video and photo shops. Most recently in Spain we have seen the collapse of the high street photo-processing chain Fotoprix [10].

In our connected world, we are awash with communication of all kinds, all the time. You do not have to be connected, but it is an easy option, whereas before it was not.

3.3 Student practice and professional practice

In the old days, students that could not attend on-campus training sessions were almost unable to undertake supervised practice activities of any kind. Many professional activities were, and still are, the domain of costly specialised facilities with strict controls on access. Consider healthcare work, aircraft piloting, publishing, business and project management, laboratory testing, etc. For professional activities that involve the use of specialised facilities the expense involved in providing access to students creates a bottleneck, even for on-campus students. In other words, the organisation of relevant practice activities for students has always been a problem for higher education centres.

At the same time, many professional activities have been transformed by the incorporation of digital tools and some professional profiles have been completely phased out. For example, there is now less demand for the services of typesetters, layout designers, postal services, switchboard operators, etc. The technological destruction of mundane jobs is a process that is only just beginning. In the long run, it will lead to unemployment and social fragmentation, as well as benefits to users. It is already possible to foresee changes in the job market in the near future. For instance, competition in the transport sector is growing. Taxi drivers, who recently saw satnav systems devalue their route-finding skills, now see ride-sharing enterprises such as Uber and Lyft [11,12] create a new threat to their livelihood.

The power of personal computing has not only changed professional practice in many sectors of economic activity. It has also had a beneficial effect on training because it has made new ways of working more accessible to students. The tools that are now used professionally, in publishing for example, can be made available to students, individually, off-campus, under their own control, at low cost.

Furthermore, even when considering skills that are not necessarily computer-mediated, such as surgery or chemistry, the skills can be learnt in an accessible way by the use of suitable simulation software [13]. The cost benefit of such applications is so great, and the benefits to students also, that exploitation of such resources is actively encouraged, even when students also have access to the “real thing” on campus.

The use of computers to carry out complex tasks in ways that are similar to professional practice empowers students, and has the potential to close the gap between pre-service and in-service training, rendering higher education more relevant to the professional world.

4 The transformation of education

Educational experts argue that the changing context within which training occurs has led to the need for an overhaul of teaching approaches and methods, and for students to take a more active role than before in shaping their training experiences. Various arguments have been put forward to support this view:

- In the industrialised countries more people are entering higher education than ever before, up from around 15% to over 40% in many countries. The growing student population includes many individuals who have little vocation or commitment and who are not particularly pro-active in their approach to their studies. Standards can only be maintained if teaching quality improves, and this can best be done by ensuring that learning activities are aligned with intended outcomes, that is, getting students to use professionally relevant skills in their training. A curriculum composed of private reading and attendance at lectures will no longer suffice [14].
- Over recent years, key skills underpinning success in education, employment and personal development have been identified by potential employers as lacking in job candidates. In 2013 one recruitment agency conducted a survey of 348 selection processes (private communication) and found that the seven key skills identified by employers were, in descending order of importance, ability to learn, teamwork, accountability, positive outlook, capacity to adapt, client empathy, problem solving. The teaching approach used in higher education has to put these skills into practice. Lectures and note-taking are not the best way of doing this.
- Single lifelong vocations are no longer an option. Whereas in the past students could hope to prepare one area of expertise and be active in that field all their working lives, there is a pressing need nowadays for people to retrain throughout their professional career. Students need to acquire lifelong learning skills, that is, the ability to retrain and enhance their professional profile throughout their careers. Once again, exposure to knowledge through transmission of concepts in texts and lectures is unlikely to suffice for most students.
- International organisations such as the European Union, through initiatives like the Bologna Declaration [15], have attempted to cajole national education systems into reform, in particular to modernise their approach by focusing on learning outcomes and transferable skills needed in the job market. There is a growing awareness that training must be relevant to the changing needs of society in general, and that it must be aligned with present and future needs. This has led to a variety of initiatives, such as university dual courses with in-company credits, and an emphasis on processes for Recognition of Acquired Competencies (RAC), so that

students can move forward without being obliged to go through unnecessary retraining.

- Many enterprises question the value of university degrees, because graduates often lack the skills they need [16]. As a result, there is a growing tendency towards enterprise-oriented certification of specific skills, with or without the participation of educational institutions. Increasingly, students can take short courses, online or on campus, that lead to certificates of attainment of clearly defined specific skills. In other words, a variety of continuing education short courses may be more useful to students and potential employers than full degree courses. In the online context, a system of electronic certification, known as badges, is gaining acceptance as a meaningful indicator of skills and interests [17]. In a similar vein, this academic year 2014-2015 the online educational portal Udacity has launched its nanodegree initiative [18].

As a result of these perceptions and tendencies, there is growing interest in new training models. This tendency is perhaps most keenly felt in the United States of America, where it has given rise, among other things, to a new kind of educational product: Massive Open Online Courses (MOOCs). These programmes derive maximum advantage from technological advances to create rich training experiences but, interestingly, they do not resort to webinars at all. The use made of multimedia resources is typically restricted to the publication of short videoclips, five or ten minutes in length, where teachers go over theoretical concepts and examples related to the material to be studied. In fact, in a MOOC there is no direct contact between teachers and students at all [19]. But MOOCs are an emerging radical form of eLearning and may not be representative of future uses of digital technical in education.

The use of short videoclips for academic instruction, however, is an interesting innovation, as has been shown not only in MOOCs but also in on-demand training in specific skills as provided most notably by Udacity, mainly at secondary school level. The use of instructional videoclips has also been harnessed as a key component of an innovative approach to instruction, initially conceived for blended learning, known as flipped teaching [20]. Flipped teaching derives its name from the fact that the activities that were traditionally done in class and the activities that students would do at home switch places. Thus in flipped teaching students at home typically watch explanatory recordings of their teacher, and other multimedia input, whereas on campus they work through practical examples and projects under the supervision of their teacher.

The emphasis on transferable skills and student protagonism is a challenge to the existing scheme of things. There are many conflicting pressures on educational centres. Should they use innovation to shore up existing models or to bring in new approaches? At an institutional level often both are attempted. Thus at the same time universities continue to operate traditional three- or four-year on-campus degree courses while at the same time they set up new initiatives in online or blended learning.

5 The place of webinars

Returning to the issue of webinars, the question remains, What purpose can they serve in the current educational context?

5.1 For online lectures

We believe that this is an inappropriate use of webinars. Lockstep lecturing is increasingly perceived as a poor use of shared time *in all contexts*. Students can find knowledge on the web; they do not need their instructors to lecture them anymore. In any case, the webinar technology is still too fragile and the need to be online all at the same time is too restrictive.

With this in mind, it is relevant to look back at the Adobe Connect publicity material quoted at the beginning of this paper: “With Adobe Connect for eLearning, you can rapidly create and deploy engaging courses and content.” It seems that the prevailing model for use of webinars in eLearning is as a platform for online lectures. If this is the case, we would argue that there is an urgent need for a new pedagogy online.

5.2 For online streaming of events

This is a poor use of webinars. Online streaming is basically unidirectional. For a back-channel Twitter suffices. Google+ or Ustream, for instance, are better alternatives for live streaming of events.

5.3 For delivery of recorded explanations

This is a poor use of this technology. Web conferencing is designed to be interactive. For delivery of recorded material, short videoclips published on a video portal such as YouTube suffice.

5.4 For interactive web meetings – web seminars

This is what webinars are designed for! Webinars are potentially useful for students (with or without teachers):

- to meet (online) and prepare team tasks and projects
- to ask each other questions and suggest responses
- to show each other how to do things
- to conduct tutorial sessions
- to ask for feedback from peers
- to float ideas
- to hang out
- etc.

In an on-campus setting, all these processes are more easily conducted face-to-face. For teachers in on-campus contexts, webinars may have no use at all! (Though students might still use them autonomously.)

For online and blended contexts, webinars can be used to create interactive arenas, but online students may find it difficult to agree on meeting times. If sufficient timetable options are provided, it may be possible to set up informal meetings between students, so that they can usefully work together online, for example, in pre-exam revision sessions.

One of the problems of new technology is that is not always clear what use it has, or if it will have any use at all. These problems are usually ironed out over time. Much new technology is quickly abandoned or superseded. Marvellous inventions, such as supersonic airliners and cassette tape recorders, were abandoned after a short time. Other inventions have proved useful by accident, such as repositionable sticky notes (the “Post-It”), which was the result of a failed attempt to create an extra-strong adhesive.



"It doesn't matter how many resources you have. If you don't know how to use them, they will never suffice." (Original source unknown)

In the field of educational technology, many teachers fall on innovations with unbridled enthusiasm. Any innovation is likely to receive some support, at least for a time, as a prestige item or a fashion gadget, if nothing else. In any event, it is difficult to foresee the utility and longevity of new technology to start with. The history of education is littered with old technology: slide-rules, tape recorders, language laboratories, overhead projectors, typewriters, books, etc. And among the success stories, who foresaw that radio would catch on? And the Internet?

6 Present and future use of webinars in higher education

Who knows at this stage how useful webinars will turn out to be in higher education? All too often opportunities presented by the emerging social, professional

and technological context are harnessed merely to prop up existing educational models rather than to do something new.

Are webinars currently used around the world, in Europe and in Spain, to deliver lectures, in other words to attempt to re-create a traditional classroom in a virtual environment? Or are they being used as an instrument of educational innovation, for setting up interactive meetings between engaged students? Further research is needed to answer this question. Perhaps the former is the case, though it is probably the latter use that will persist in the long run. For that to happen, however, online multimedia interaction still needs to become easier to use, and more reliable. In other words, a utility.

Without doubt, this will occur. Browser-based native HTML 5 and Web Real Time Communication technology are moving forward fast [21]. Demonstration pages of this technology are available, at <https://talky.io> and elsewhere. These developments will improve functionality, and give rise to new service models and lower costs. Quality webinar tools will probably become more widely available in contexts such as Google Hangout (already), Facebook, and other social networks.

The present period is one of rapid uptake, and changing models and conditions for use of webinar technology in higher education. Further research needs to be carried out to monitor trends in different parts of the world and context-dependent factors such as integration with other information services and VLE/LMS² systems already in use.

In the final analysis, if webinars become a utility, then it will no longer be a case of using webinars or not, in online or on-campus training programmes. Webinars will be used freely and ubiquitously, not primarily to communicate content, but rather for students (and teachers) to organise rich interactive meetings, whenever they want, on the go. Used like that, webinars will become a useful communicative tool for us all.

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