Small Group Learning Tools In The Social Distancing Era

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**Abstract**

The recent pandemic has radically changed our profession in more ways than we could have imagined. One of the areas significantly affected has been education. The vast majority of conferences were cancelled or changed to webinars, educational courses were postponed and weekly teaching sessions were cancelled. These measures were taken to try to reduce the spread of COVID 19 amongst the NHS workforce. Businesses, healthcare and education managed this disruption by utilising technology as a potential solution. The transition from face to face to a virtual learning environment is not straight forward and is likely to have an impact on the effectiveness of small group teaching sessions. Current teaching models advocate multidirectional communication which can be difficult through the medium of conference software. The question has to be asked whether conferencing software provides a safe and effective platform? It may be harder to identify learners who are struggling or failing to participate and need encouragement. Overcoming these hurdles does not require any new or inventive teaching techniques and current practises can be adapted to ensure online teaching sessions are effective.

This article compares highly rated free video conference platforms available and evaluates them in terms of their ability to conduct teaching sessions while social distancing is still in effect. An internet search for previous comparisons between video conferencing software was conducted that found a core group of approximately eight platforms which were regularly compared as they were deemed to be provide the most features and be the highest performers.

The chosen platforms were then judged based on certain criteria derived from commonly analysed aspects in other software reviews and features that would be important to conducting small group teaching sessions. This will enable groups of learners unable to access institutional platforms to choose a suitable one for themselves.

**Keywords:** Distant learning; COVID; technology: video conference software; small group teaching
Introduction

The recent COVID 19 pandemic has radically changed our profession in more ways than we could have imagined. One of the areas significantly affected has been education. Conferences were cancelled or changed to webinars, educational courses were postponed and weekly departmental teaching sessions were cancelled. These measures were taken to try to reduce the spread of COVID 19 amongst the NHS workforce (GMC, 2020). Business, healthcare and education reduced this disruption by utilising technology. Technology is advancing rapidly and has been facilitating distant learning for many years (Harden, 2005). It has become a prominent part of our everyday lives especially in education. During this period of infection control measures, it is the main avenue for continuing education (Ahmed, Allaf and Elghazaly, 2020). Social isolation and distancing has led to a spectacular boom in the use of video conference software. During the first couple of weeks of social isolation Zoom, was downloaded 20 times more often than in 2019 and Hangout Meets was downloaded 30 times more often. The number of daily participants using Zoom has increased since December 2019 from 10 million to 300 million (Zoom(A), 2020).

It is undeniable that video conferencing software has facilitated many learning activities which would have otherwise been cancelled but that is not to say that the transition from face to face to virtual learning environments is straight forward. Inquiry based teaching is an effective model used to deliver small group teaching sessions (Cantillon and Wood, 2010). Rather than the one way transfer of facts from teacher to learner it is a collaboration between learners and the tutor to share knowledge, generate their own learning points and is an ideal tool to develop clinical reasoning (Irby, Cooke and O'Brien, 2010). This method of teaching is difficult to conduct over video conferencing software as communication is multidirectional and sharing of resources is a necessary requirement. To benefit from a digital learning environment, the teacher must be sure the conferencing software provides a safe and effective platform (Pei and Wu, 2019). The efficacy of the sessions will almost definitely suffer from the technical aspects such as delays in communication, difficulty sharing resources and unfamiliarity with the software (O'Doherty et al., 2018). There will also be human factors to consider. Participants may be learning from a work space they do not usually use, they may be uncomfortable being seen on a camera in their own home or unsure of how the online teaching session will be conducted. The use of conferencing software also raises issues for the tutor that will need to be addressed. The tutor will need to be confident with the chosen software as it is possible others in the group will need assistance. For the session to run smoothly, the tutor will need to fix any issues that arise swiftly to prevent delays or breaks in concentration. Tutors may struggle to gauge the contribution from each of the members of the group and assess their progress. A requirement of the tutor in any small group teaching session is that they are able to identify learners who are struggling or failing to participate (De Grave, Dolmans and van der Vleuten, 1999). Tutors will need to be vigilant as the usual characteristics of a struggling learner may be difficult to detect when the session is conducted through a virtual medium. It is likely to be useful for tutors to discuss their experiences with each other which may help the identification of participants having difficulty, it may be a challenge to discriminate between users who are having difficulty with the software and those who are having difficulty with the content of the teaching session.

Overcoming these hurdles does not require any new or inventive teaching techniques and current practices can be adapted to ensure online teaching sessions are effective (Ten Cate et al., 2004). An introduction before the teaching session commences provides an opportunity to deliver expectations, rules, the method by which the session will be conducted and address any questions. This will make the learners feel safe and confident. A tutorial on the use of the software will ensure the session runs smoothly once it starts and resources can be shared at the time of discussion.

This article will discuss highly rated, free video conference platforms and evaluate them in terms of their ability to conduct teaching sessions while social distancing is in effect. It evaluates the platforms which are the most...
appropriate to facilitate small group teaching. More specifically sessions for postgraduates conducting weekly within a medical department. These groups are likely to have similar requirements of the software, unlikely to be provided a budget to purchase it and will need access from home and work. With that in mind the software needs to be available via an internet browser as a health care institution may prevent the conferencing software app being downloaded onto an NHS device. Many NHS devices will only permit the use of Microsoft Internet Explorer as this is the standard internet browser available and due to the restriction of downloading to NHS devices, other internet browsers cannot be used. As a result of this, platforms that are not compatible with Internet Explorer are not suitable for facilitating small group teaching within the NHS. This article is less applicable to educational institutions as they are likely to already have the necessary software to provide distant learning. Previous comparisons of available software assessed the ability to conduct conferences, business meeting or social gatherings but none assessed the ability to facilitate small group teaching. It was deemed appropriate for an original analysis with different criteria to be performed.

**Method**

Deciding which software platforms to review was difficult as there are many which facilitate video communication for small group teaching. An internet search for previous comparisons between video conferencing software was conducted which found a core group of approximately eight which were regularly compared as they were deemed to provide the most features and best user experience (G2, 2020). The chosen platforms were compared against each other and they were judged based on features that would be important to conducting small group teaching sessions.

The criteria chosen were the number of participants per call, time limit of the call, duration of sign up process, ease and method of inviting other participants to the group or call, in call features and out of call features. The specifications of the conference platforms were taken from their websites during the sign up process. Two individuals completed the sign up process for all of the platforms. The platforms were tested using the browser, desktop app and mobile app options. The participants conducted a call through each of the platforms and made use of any features offered.

The analysis was performed using objective data other than the sign up time and ease criteria. This assesses the process of registering an account with the software. It was classified as simple, moderate or complex. Software categorised as simple had no more than two steps to set up the account and the process was felt to be straightforward with clear instructions. If categorised as moderate more than two steps were required to create the account and a lengthier verification process was required. Complex indicates the sign up process was difficult to navigate, required multiple steps and novice users would likely require assistance.

**Review of the different platforms**

**Skype**

Skype has been a favourite for many years and tends to be used more as a social platform of communication rather than for business which is what its sister software Microsoft Teams targets. With that said, Skype offers a familiar platform for conferencing and screen sharing. Learners are likely to be familiar with the software which will help the session run without interruption or delay. Users are able to file share via the chat function, call duration is unlimited and up to 50 participants per call (Skype, 2020).

An added feature some may find appealing is the ability to blur the background. This could be considered less invasive and improves the control participants have over their learning environment. It does not offer the ability to mute other participants which may be tricky if there are a large number of people.
Setting up a profile is straightforward and participants can be added from a directory. There is the option of adding contacts to this list or finding people on the global skype directory. Interestingly, some participants were harder to find than others.

**Google Hangouts**

Google offers a few variations with slightly different names (Chat, Meet and Hangouts) which are based on the same video conferencing software. Previous reviews commented that it was hard to find the free version but that was not the case in this study. Participants will need to create a Google account to log in. Google hangouts is the most basic but free conferencing software offered by Google and it will accommodate 10 people for an unlimited period of time (Google, 2020). It was very easy to add participants via their Google account. Of all the software compared it is probably the most basic with the most limited features. Sharing photos and videos is possible but these are the only document types that can be transferred.

Due to the limited features and the inability to share teaching resources Google Hangouts would only be suitable for a select audience planning remote teaching sessions, e.g. single teaching sessions without the requirement of sharing resources.

**Microsoft Teams**

Microsoft Teams offers an extensive variety of features. The sign up process is probably the longest of all of the applications reviewed and participants are required to create a company name. A few steps had to be repeated but within about 3 minutes participants were registered. Familiarity with navigating online sign ups was definitely of benefit. The main obstruction was navigating a point at which participants were asked what they planned to use Teams for. The first option was for education which wasn’t suitable as it asked for the education centre at which participants were based.

The second option was for friends and family which transferred users to a Skype log in. The third was for business which is where participants were required to create a company name and were then able to access the software.

The software has a very similar layout to Skype. Participants can be added into the ‘team’ via the same directory service offered by Skype. Participants can receive notification of an incoming call unlike a few of the other apps which require the other members to dial into the call via a URL. 20 participants can take in each call and they are of unlimited duration (Microsoft, 2020).

It has a typical variety of in call features such as file sharing and muting but where Teams excels is the features available outside of the calls. File sharing or messaging are easy and participants do not need to be in a conference call to have access to the messages on the chat board or files sent between the team members. This is an ideal platform for a series of teaching sessions and conducting IBT. These features make Teams fairly unique and if they appeal, it is certainly worth considering Teams as the platform of choice.

**Cisco Webex**

Cisco webex is a less commonly used platform but still offers a variety of features. They have recently increased the benefits of their free software by increasing the number of participants from 50 to 100 (Webex, 2020). The call duration is 50 minutes which could cut teaching sessions short. This may pose a significant disadvantage compared to the other platforms. Signing up is simple and participants are added by sending a URL. It has a good variety of in call features. Only Cisco Webex and Zoom offer the full house of screen sharing, file sharing, chat, muting and recording the meeting on the free versions of the platforms.
Uberconference permits a call duration of 45 minutes and a maximum of 10 participants (UberConference, 2020). Signing up was straightforward and it is the only platform to offer guest sign in if participants do not want to create a profile. It has a reasonable amount of in call features but does not provide the ability to share files. This would be a reasonable choice for people who want easy access to conferencing software to set up short teaching sessions where the participants may vary regularly.

Zoom
At present it could be argued that Zoom is the most popular of video conferencing software available. The company has doubled in value from 2019 when it had a value of $330 billion to $622 billion in 2020 (United States Securities and Exchange Commission, 2020). Zoom allows 100 participants, sign up is swift and the 1st conference has an unlimited duration but from then on calls are limited to 40 minutes (Zoom(B), 2020). This is quite a significant time limit and may negate its use for many teaching sessions. This is something to be carefully considered if the planned teaching session could last an hour. This obstacle can be avoided by having a different participant hosting each time, taking full advantage of the 1st call being unlimited or a member of the group that has the paid version. Zoom sports a variety of in call features: Screen sharing, file sharing, chat, muting, recording changing the background to a scene of the participants choosing. There are no out of call features but Zoom is a tried and tested software and judging by the recent increase in users and worth people have approved.

8x8 meetings
8x8 meetings has the capacity for 50 participants and provides an unlimited duration of conference (8x8, 2020). Once again a link is emailed to the participants, sign up is simple and the call screen is nicely presented. It has a few added in call features such as the ability to adjust the volume of other participants or to mute everyone other than the individual selected. It has all of the other features we have come to expect other than the ability to file share which, as previously discussed may be key to teaching sessions.

The key features of each conferencing software platform have been collated into this table below. These were deemed the key features of a conferencing platform suitable for distant small group teaching (Table 1).

Table 1: A summary of the features offered by each conference software platform.
Limitations

The platforms were tested using the same internet connection therefore it is difficult to say if any one of the platforms tested could be affected by a poor internet connection more than the others.

The subjective results of this study are largely based on the opinions of the participants and supported by research performed by analysing previous comparisons or reviews of the platforms. As such these results may vary if a larger group analysed the software. Objective results such as ‘features available’ are not affected by opinion bias. The impact of the subjective results has been minimised by basing the final conclusion on objective results such as ‘features available’.

Conclusion

All of the conference platforms performed well but of those tested there are a few that were favoured over others. They all have a similar sign up method but some take longer. People are invited to the call via a call function or emailing a link. The layouts of calls are very similar between the platforms with a modest variation in features. The best performing platforms were Zoom and Microsoft Teams. Despite Zoom conferences being limited to 40 minutes a lot of people are now familiar with its set up and are comfortable using it. This raises an issue as many people have now hosted a conference and there are fewer first-time users to benefit from the unlimited call duration. This means it will be necessary for people to pay to facilitate sessions that are longer than 40 minutes.

Despite Teams having the trickiest set up, it's in and out of call features are very impressive. If users are familiar with Skype they are likely to be comfortable with the use of Teams. If the same teaching group will be meeting and would like to share teaching resources and participate in an out of call chat, Teams would be a very good choice.

As there are many platforms that perform well, choosing the software that provides the most appropriate features will likely be due to personal preference.

Conference software can facilitate teaching sessions by providing a safe and effective learning environment (Ray, Fried and Lindsay, 2014). It requires adaptation from both the learners and the tutors but by utilising established techniques, teaching sessions can continue during the restrictions.

Following this drastic change to teaching delivery there is a high likelihood that more sessions will be delivered remotely following this pandemic.

Take Home Messages

- Distant small group learning is made easier by video communication software
- There are a variety of platforms to choose from, deciding which to use will be down to personal preference
- Current methods of teaching can be adapted to conduct virtual learning
- Teaching sessions conducted via video conferencing software may become the mainstay of postgraduate medical education

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Bibliography/References


### Appendices

None.

### Declarations

*The author has declared that there are no conflicts of interest.*

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