



*The Electronic Journal for English as a Second Language*

## **Tweaking Technology: How Communities Meet Online Using Google+ Hangouts On Air with Unlimited Participants**

**\*\*\* On the Internet \*\*\***

**November 2013–Volume 17, Number 3**

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### *Introduction and Overview*

It is becoming increasingly easy for educators to set up synchronous presentation venues to expand their opportunities for professional development and, once a comfort level with the requisite tools is reached, to broaden the reach of their classrooms beyond just the localized setting. There have long existed proprietary means to do this, such as with Adobe Connect or with Blackboard Collaborate (formerly Elluminate). These synchronous presentation tools typically include ways for participants in the experience to talk to one another and chat in text, as well as see each other's videos. There are also tools for a moderator to show URLs on a shared browser, or screen-share with participants, or conduct polls, or show PowerPoints, drawings, and images on shared whiteboards — and record the presentation. However, the expense incurred from using proprietary software for this purpose puts these tools effectively out of reach of educators lacking institutional connections (although Blackboard provides trialers a free three-seat free Collaborate vroom, <http://try.bbcollaborate.com/trial/register.go>; but three seats is hardly enough for heavy-duty professional development or interclass collaboration).

Educators have also a number of free options. Many educators connect on Skype, perhaps in mashup with other online tools to emulate virtual presentations rooms; possibly in conjunction with the presentation or interactive whiteboard tools reviewed in Hall (2013) and Walsh (2012). Others might use the free presentation space, text chat, voice, and video available through a single URL thanks to one of these other free online virtual room providers:

- Vyew <http://vyew.com/>
- Big Blue Button <http://bigbluebutton.org/>
- Big Marker <http://bigmarker.com/>

Yet another option that has skyrocketed in popularity lately is Google+ Hangout, particularly Hangouts on Air (or HoA — the difference is that the former is a meeting space with no broadcast; whereas with the latter, you broadcast the session and in so doing, automatically record it in YouTube, which in turn streams it, as we shall see).

Hangouts, used in conjunction with available apps and toolkits, have all the features expected in a synchronous presentation space and then some. For example, besides being able to talk to one another and chat in text, as well as see each other's videos, there are a number of other helpful apps (seven most common of which are detailed in Honigman, 2013); for example:

- A screenshare app
- A Google Drive app, let's you share all kinds of documents including Presentations (similar to PowerPoint) and Drawings (similar to whiteboard)
- Slideshare and YouTube apps to allow for common viewing of slides and videos

In addition, there is a Toolkit app that allows you to, among other things, overlay a name tag onto your video image. You can also have a set of costumes that allow you to dress your moving video image up as a pirate or princess or pet animal and have F.U.N. while interacting with others. Finally, though seamlessly compatible with PC, there is an app that lets you run HoA on an iPad with satisfactory results.



Webcasters and participants alike generally find Google+ Hangouts on Air compelling and easy to use, but HoA has one significant drawback. HoA allows just ten participants to interact simultaneously with webcam and voice in the hangout itself. If invitations are issued to a group to join a hangout, the 11th arrival is told the hangout is full. If Hangout is left to work as designed, late arrivals knock, but no one answers.

This article goes on to explain how this limitation can be overcome by using a web 2.0 wiki or blog space where the hangout is viewed and heard as it streams. The process entails starting a hangout and publishing its URL at the web space so that visitors can join if there are places in the Hangout, or, if it is full, listen to its stream and interact with participants in the HoA via a text chat embedded on the same page as the stream.

This can happen because the YouTube URL that you get when you start the Hangout will play the stream as soon as the broadcast button is hit in the hangout, and the direct YouTube link can be given out, or its embed code can be placed in any space that will accept a YouTube embed, so that in conjunction with an embedded Etherpad clone, the group can interact in publicly accessible audiovisual stream and text chat, and be notified when places become available in the Hangout so they can join it directly. You place all this information online in a Web 2.0 Virtual Studio page.

### **Setting up your Hangout on Air**

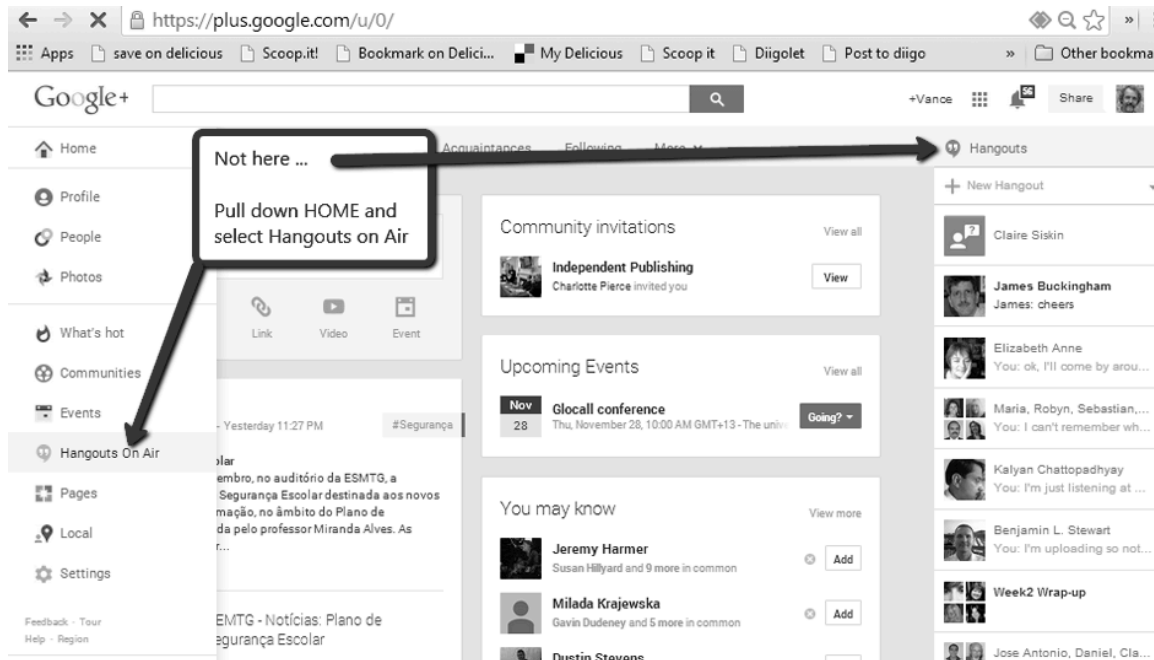
But before all that, you need to know how to start a Hangout and broadcast it so it becomes a Hangout on Air.

First of all, you need to be logged on to your Google account. The interface changes occasionally, but you need to find the entry into Google+, which at this writing is a + before your name to the left of your profile.



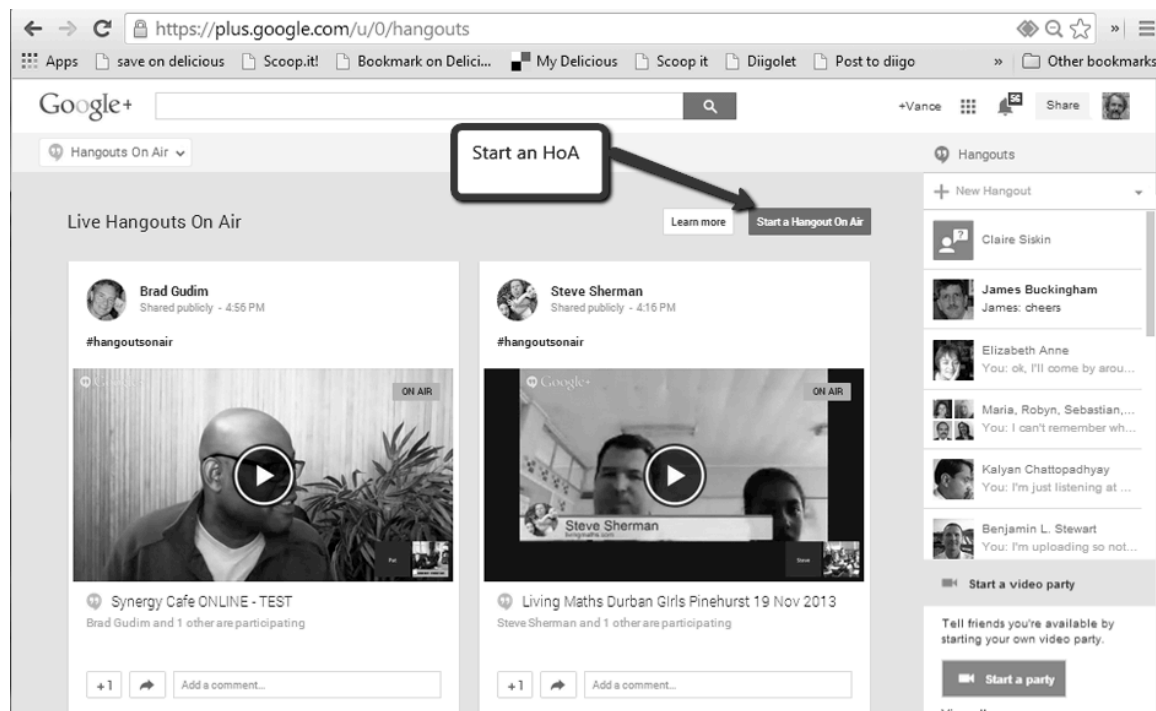
**Figure 1. Google+ log in page**

When you open your Google+ page you should find a HOME pulldown menu in the upper left. When you pull this down you should see a number of options, one of which is “Hangouts on Air” or simply “Hangouts”. Click on the Hangouts or HoA in your HOME menu (if you choose the one at the right of the screen, you get a different Hangout page, not one where (as far as I can see) you can start a Hangout.



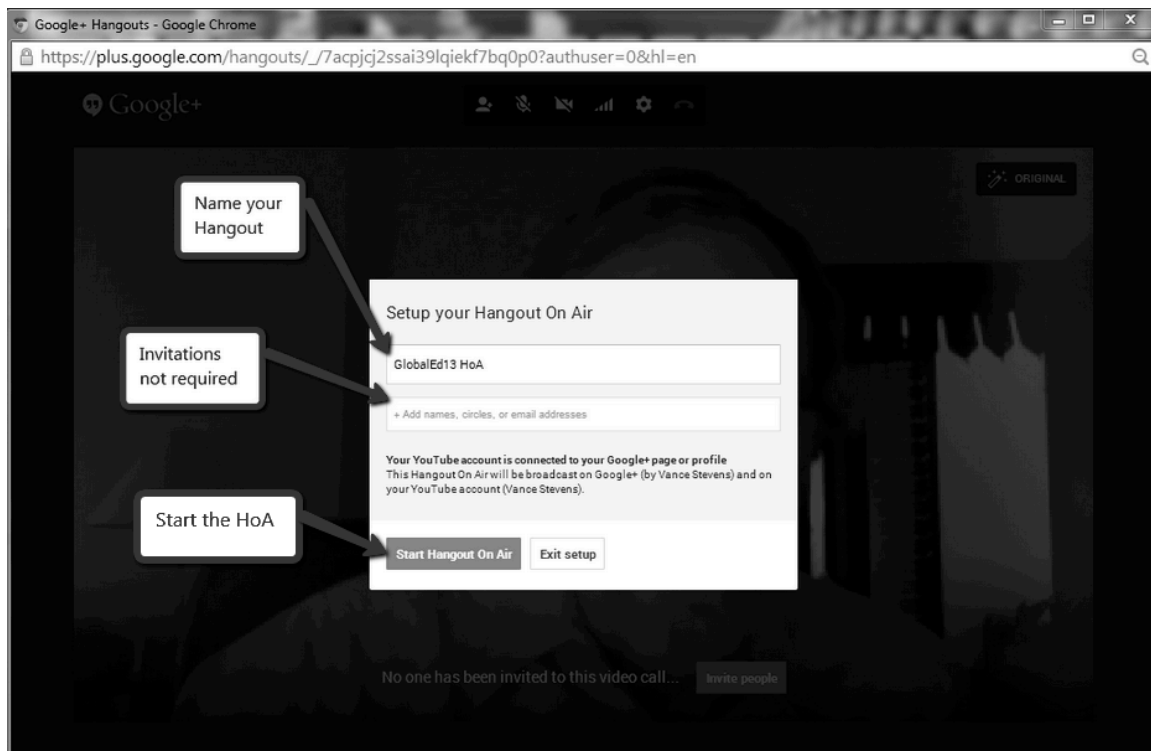
**Figure 2. Hangouts on Air**

When you choose Hangout or Hangouts on Air from the HOME pulldown menu, you should be taken to a screen with a button on it, which you press to start your Hangout.



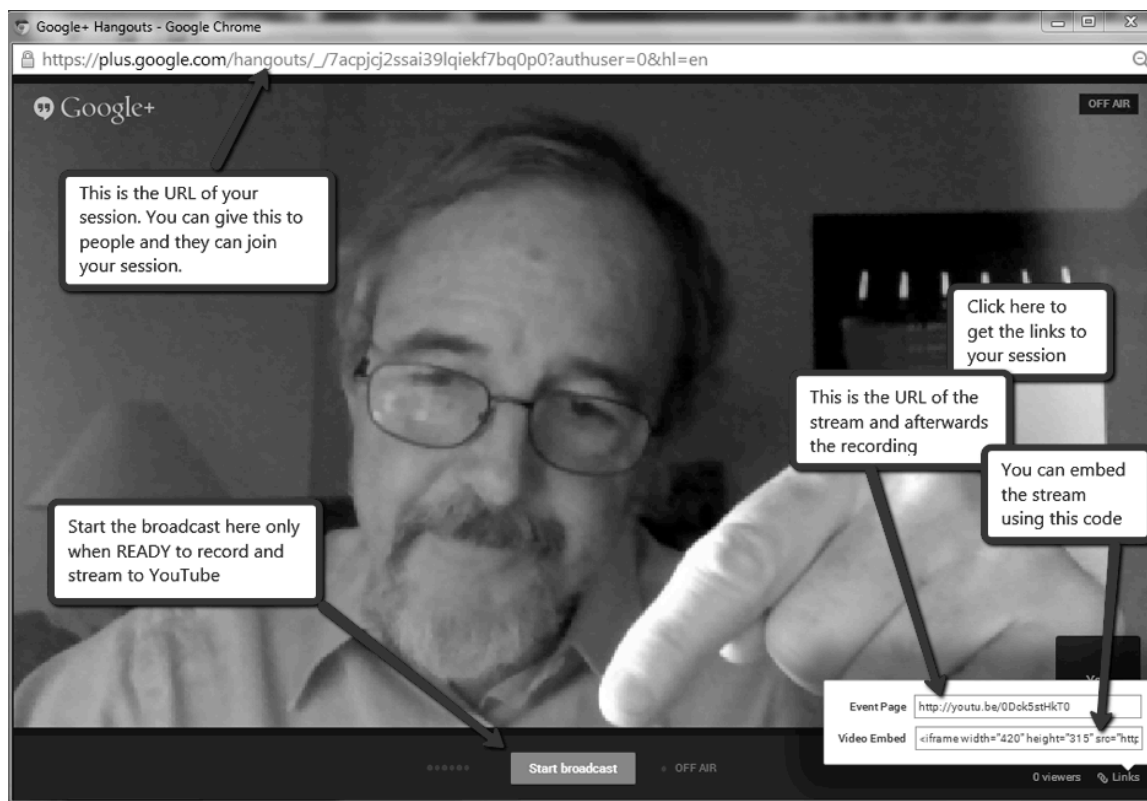
**Figure 3. Start an HoA**

At that point, your Hangout will start in a new window, and you'll just need to give your Hangout a name. You can also invite individuals or send invitations out over your Google+ communities at this stage. This will broadcast notices to these selected users that they are invited to your Hangout, but it's optional because, in the method described here, you share the URL at the top of this window with others in your community so that they can join your hangout.



**Figure 4. Set Up Your HoA**

When you start the HoA, you get all the vital information you can see in the window shown in the next image. Notice however that you are simply in a Hangout at this point; you have not started broadcasting, which will make it a HoA.



**Figure 5. Start the Broadcast**

You don't need to be in any hurry to start the broadcast. You can take your time now (assuming you've given yourself an early enough start) to set up the Virtual Studio page which will allow your class or community of practice to join this event, either in the Hangout itself, or in the YouTube stream. The YouTube URL that you get when you start the Hangout won't play the stream until the "Start Broadcast" button is clicked in the hangout.

In the screenshot above, you can see that you have the URL of the HoA at the top of the window, and when you click on the LINKS button at bottom right, you get a further two bits of information: the URL of the YouTube stream, and its embed code which will let you set it up as a widget in your Web 2.0 space.

You now have:

- The direct link for your HoA session, which you can share with others, so they can directly join the HoA (up to nine of them plus you)
- The YouTube link which you can also share, and anyone with that link can use it in a browser to play the HoA as it streams through YouTube
- And the embed code to paste into your Web 2.0 space to allow people to click on the PLAY button to hear the stream

Embedding the YouTube player is optional, as your community can listen to the stream by just pasting the YouTube link to their browsers. But the advantage of embedding that code to a Web 2.0 blog or wiki page is that you can embed a text chat widget on the same page to set up a Virtual Studio where participants can not only view the stream and listen in, but interact with all participants in a common text chat space as well. This Virtual Studio could be the main page for your group Hangouts, where they can find the direct link to the Hangout, or hear the stream if the Hangout is full, but still communicate with all participants in the text chat space in your Virtual Studio.

So now we'll add an embedded text chat, and it's almost show time.

### **Setting up an Etherpad chat space**

Any chat that creates a widget and allows multiple interactants to inhabit the same space will work here. Etherpad embedded in a simple HTML frame is one possible choice.

Etherpad was a company that created a versatile collaborative text tool in such a way that anyone could set one up just by clicking on CREATE, and then simply sharing its URL with others who write in the shared collaborative space in real time. That is, when one person writes, all the others in the space can see what is being written by the remote user, and many can write at once, and see each other's writing as it happens. Users' contributions are color coded to their names in the text chat, also accessible in a sidebar. The software was so good that Google bought the company and its employees put to work improving the real-time interface in Google Docs.

Before its purchase by Google, the Etherpad code was open source. and Google did nothing to prevent its spread. Many have installed the code on their own servers and perpetuated the service through numerous hosts. The hosting varies as to reliability, the number of simultaneous users allowed (be careful with this one if expecting a lot of visitors – some are limited to 8 or 15), and how long the host will retain the pad created (read the fine print). In aggregate these are called Etherpad clones, and six of them are described in Lowensohn (2010). Googling will find you others (and you can visit <http://etherpad.org> and read the Wikipedia article on Etherpad here: <http://en.wikipedia.org/wiki/Etherpad>).

To embed an Etherpad clone in your Web 2.0 space, simply put its URL inside a frame tag in the "source", "text", or HTML view on your Web 2.0 space (if you paste the code into the WYSIWYG view, then what you see is what you get, and you will get the HTML code appearing as text in the body of your page, not the embedded widget). Here is sample code you can use in your portal page (substitute the URL of your Etherpad of course, and vary height and width to taste):

```
<iframe allowfullscreen="" frameborder="0" height="450"
width="950"><br />
src="http://etherpad.mit.edu/p/GlobalEd13HoA"></iframe>
```



## **How it works in practice**

The YouTube URL that you get when you start the Hangout will play the stream as soon as the broadcast button is hit in the hangout, but the embed code can also be placed in any space that will accept a YouTube embed, so that in conjunction with an embedded Etherpad clone, the group can interact in publicly accessible audiovisual stream and text chat, and be notified when spaces become available in the Hangout so they can join it directly.

You announce your event through your class, community, or social media channels (Google+ communities, Facebook, Twitter, forums, listservs, etc.). You give in that announcement the URL of your Virtual Studio, the Web 2.0 space you are setting up. For example, here are

- A page set up for a demonstration of this technique for the Global Education Online Conference (Stevens, 2013)  
<http://learning2gether.pbworks.com/w/page/70926447/how2Hangout>
- A space where Hangouts for Learning2gether  
<<http://learning2gether.net/about/>> are managed:  
<http://webheadsinaction.org/live>

Set up the Web 2.0 space so it can be quickly modified with the URLs of these three interactive objects:

- The direct link URL for your Hangout
- The embedded YouTube player for the stream (along with the direct YouTube link in case of problems with the embed)
- The embedded text chat (along with the direct link to that chat, just in case)

If you are recycling your Web 2.0 space through recurrent meetings, then once the stream stops, the YouTube links will play the session recording, and the Etherpad text chat will contain whatever is left over from that event. You can create a new one if you wish, or use same one over and over again as a Virtual Studio community space where members can leave their thoughts and comments between sessions.

Prior to the time of the event (say, an hour beforehand), set up your Hangout so that you have its URL (in the top of the Hangout window) and its YouTube link and embed code, but don't press Start Broadcast until you are actually ready to record and stream. Leave time to put the URLs and embed code into your Web 2.0 Virtual Studio page so that it will be ready for visitors to your event.

Community members who visit this page at the time of the event will find the three links and artifacts. Some may prefer to listen to the stream, but most will likely attempt to join the Hangout. As they appear (before you have started the broadcast), you can use the

time to help them adjust their microphones and webcams and familiarize themselves with the environment. At the appointed time, you press the “Start Broadcast” button, and the stream now becomes live in the Web 2.0 space you have set up. All participants in the session will be either in the Hangout or listening to the stream, and all are able to interact in the Etherpad chat.

Since only nine (plus you) can be in the hangout at any given time (when anyone leaves, that place is available), you need to monitor the Etherpad chat to see who else has appeared at the Virtual Studio and is indicating they are listening to the stream. You can interact with them, include their comments and questions in your broadcast, and from time to time you can invite them into the Hangout, and suggest that some who have had their turn make room for them. Usually there will be people in the Hangout who are happy to move offstage and let others come into the conversation.

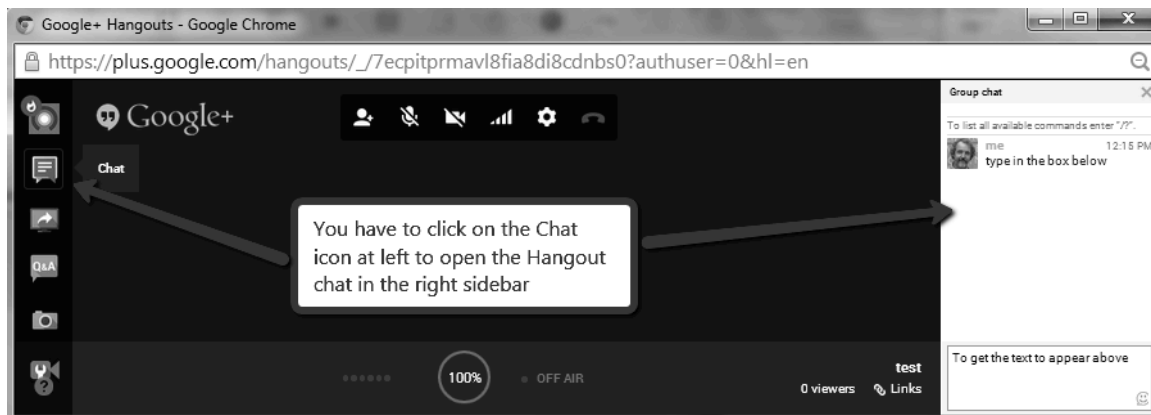
### **Variety of conversations: A serendipitous affordance**

Many kinds of conversations can take place in the spaces made possible through this configuration. The moderator might find it difficult to monitor all of them. However, participants might make use of the variety of back channels so the moderator should be aware that they exist. They are:

- In the hangout itself
- In chat associated with being logged in to Google
- In the EtherPad chat sidebar at right
- In the EtherPad main display space

#### *Hangout text chat*

The text chat in HoA is pretty straightforward (except that it has to be activated, as shown in the image below). It’s the chat that everyone in the Hangout sees. It’s not seen by people outside the Hangout, and it’s not a part of the YouTube recording, so it is lost when the session closes (unless someone takes the trouble to copy and paste it while the HoA is in session).



**Figure 6. Using Chat**

When moderating your session, keep in mind that the only text chat that everyone can see is the one in your Etherpad text chat embed, so you might encourage all participants, whether in the HoA or in the stream, to interact there.

#### *Google text chat*

Google text chat becomes available when many users are logged on to the same app, such as YouTube, so a back-channel here is possible and sometimes happens (when someone starts chatting here, some participants might notice it and respond). People in the Hangout might not be aware of this back channel shared by those listening in on the stream. Here is some sample chat from a recent HoA (all these examples are from <http://learning2gether.net/2013/11/03/learning2gether-with-evo-moderator-training-week-2-hangout-on-air/>).


https://talkgadget.google.com/u/0/talkgadget/\_/frame?v=1383319612&hl=en#tgtn\_c

Marilina, Hora, Susan, Claude, Isil, Rob, Jens kjaer, Luisella, Andy, Cintia, Mike, Shelwyn, +15

27

on YouTube is working perfectly well  
Mercedes • Sun, 6:14 PM

**EVO Moderators Week 2 wrapup**



<https://www.youtube.com/watch?v=TFOmE5Uk1I>  
Not right now, but I have at other times  
Rob • Sun, 6:15 PM

Halima joined the Hangout.

for the ipad question  
Rob • Sun, 6:15 PM

Lizabeth joined the Hangout.

really intresting  
Mercedes • Sun, 6:16 PM

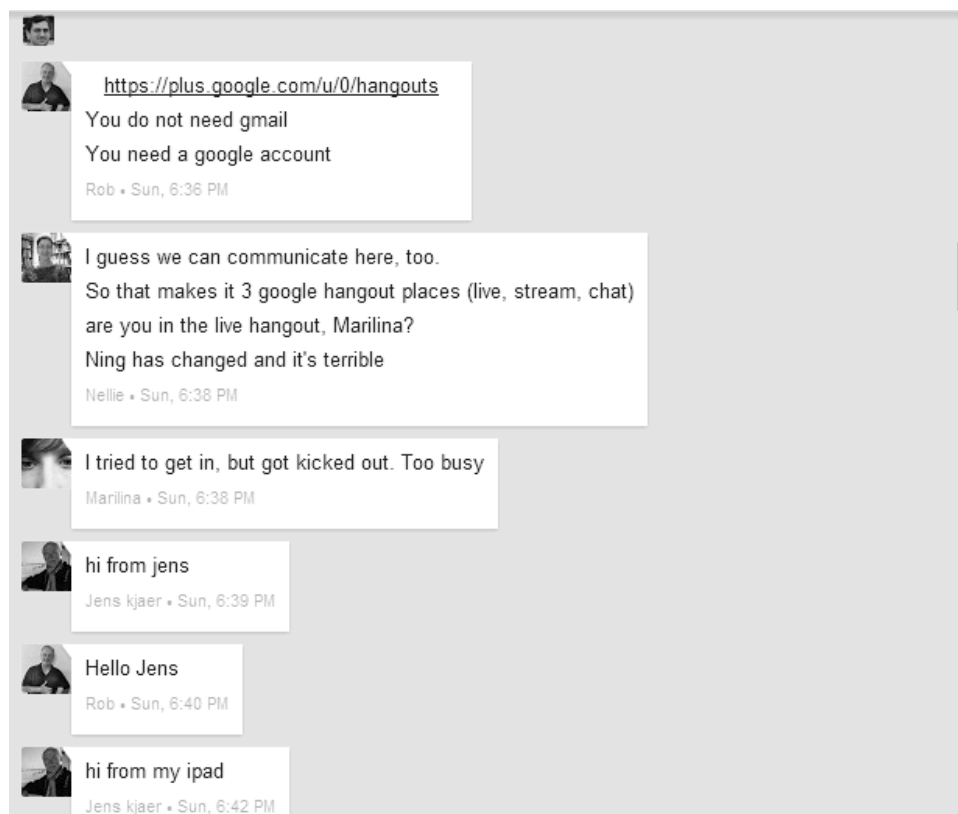
I am monitoring 3  
Rob • Sun, 6:19 PM

Do YOu need to broadcast it on your YouTube channel?  
Mercedes • Sun, 6:19 PM

Hi, I'm following you, but can't speak  
Marilina • Sun, 6:19 PM

Youtube chat, and this and below the G+ stream  
Rob • Sun, 6:20 PM

Bedrettin joined the Hangout.



**Figure 7. Chat space example**

*Text chat in Etherpad right sidebar*

Etherpad was created on the premise that a document is pasted into the main display space and viewed and/or altered by synchronous or asynchronous participants in the Etherpad space. The right-sidebar text chat enables participants to communicate with each other outside the main document either in real time or by leaving comments to be followed up on by people who happen on the space after the commentator has left it.

Depending on how your group interacts, and whether or not you recycle the same space week after week, this chat can perform similarly to a Skype group chat, where member of the group either encounter each other in real time and converse on the spur of the moment, or leave questions or comments for the group to address later. The salient affordance with Skype is that you are notified of these messages when you log on to Skype (as many Skype users do frequently) whereas with Etherpad, you need to return to that space (which people may be unlikely to do often, unless it's a space used often by a class or workgroup). Still the chat recorded here can be of similar nature to what often accompanies a live session, or it can take on the more productive character of a community of practice negotiating solutions to common problems.

Maizie:18:12 where is the direct youtube link?  
 ElizA:18:13 <http://youtu.be/TFOMe5UkI1I>  
 ElizA:18:13 on the main page on the right  
 Maizie:18:14 find it and am now listening to youtube stream  
 Maizie:18:14 I have been waiting to get in the hangout for 1/2 hour!!! didn't get in  
 Tamas Lorincz:18:15 ;-(  
 ElizA:18:15 that's a good idea - I'll get the youtube on my tablet 😊  
 ElizA:18:15 Tamas - were you in at any time?  
 Tamas Lorincz:18:16 No, I didn't want to barge in, I thought I'd just lurk today 😊  
 ElizA:18:16 ust realised - it wanted to update my Java - though I did it not long ago  
 ElizA:18:16 could that be a part of the prob of getting in?  
 Tamas Lorincz:18:17 Interaction here seems to be pretty awesome though.  
 Tamas Lorincz:18:17 Yes, that can be a reason.  
 ElizA:18:17 (@TL - I just don't see you "barging" anywhere !  
 Tamas Lorincz:18:17 If java is downnloading/updating it likes to stop java running  
 ...  
 ElizA:18:18 Oh dear 😞  
 Jens Kjaer Olsen. Denmark:18:18 hi from jens  
 ElizA:18:18 Jens - are you in or out?  
 Tamas Lorincz:18:18 Yes, I am and it's looking pretty good.  
 Jens Kjaer Olsen. Denmark:18:18 am i on here?  
 ElizA:18:18 No ... in the hangout  
 Jens Kjaer Olsen. Denmark:18:19 oki  
 ElizA:18:20 Cool - I've got the you tube streaming on my tablet!  
 unnamed:18:22 hi vance and all! i can't access G+. tried several times  
 unnamed:18:22 am following on YT and finally got the text chat going  
 unnamed:18:22 i need a new computer 😊

## Figure 8. Example chat recording

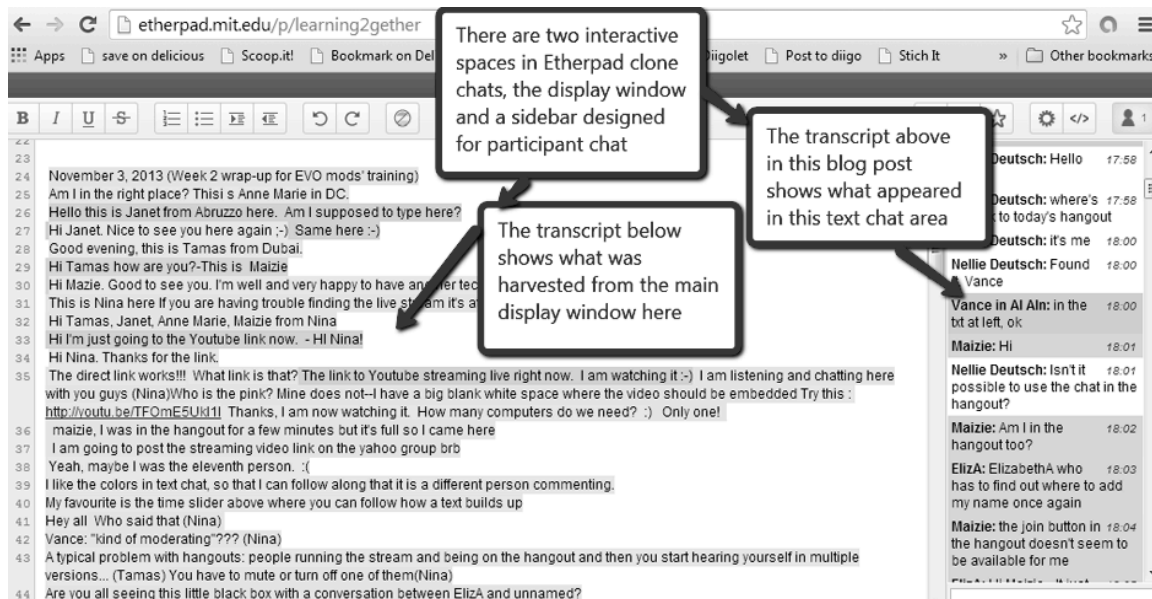
### *Text developed in Etherpad main display space*

As mentioned, this space was designed to accept a working document that participants in the space would either view or develop collaboratively. In the Web 2.0 spaces that I set up to manage Hangouts, I place information here to tell people what will happen in this space, and since it's a URL that people might also visit independently of the Web 2.0 space, I put the link to the HoA and to the YouTube stream here as well. I also put some links to screencasts here explaining to newbies two less-intuitive aspects of recent renditions of Etherpad:

- how to open the chat box - <http://screencast.com/t/YuzEU1L2TFMx>

- how to identify yourself in the space – <http://screencast.com/t/iCOKdm1KJNuG>

However, what is really interesting about this space is what people tend to write here during Hangouts. Whereas the other text chats generally get short comments, where participants' thoughts are often interrupted by those of other participants, this main display space in Etherpad might get comments of a more reflective nature. For example, from a recent HoA:



**Figure 9. Etherpad spaces**

## Conclusion

This article has explained how to set up a Web 2.0 Virtual Studio so that it enables virtually unlimited participants to interact in and around a Google+ Hangout. We have seen how the method described here can serve to activate a blended classroom or collaborative space for teacher professional development for far more participants than are normally able to access a Google Hangout on Air, in such a way that no participant is left behind. We have also seen the kinds of interaction to be expected in four possible back-channel chat spaces: in the Hangout itself, in Google chat made possible by the fact that all participants are present at a given Google app, in the Etherpad text space, and in the Etherpad display space while the session is in progress. A look at some differences in participant interaction in each of these spaces provides an interesting insight into some unexpected affordances of eliciting audience interaction while using Google Hangouts on Air.

## Acknowledgement

I am indebted to Jeff Lebow for showing me the technique described here. Here is where he bestowed on me this knowledge:<http://webheadsinaction.org/painless-magic-vance-learning-jeff-lebow>

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