How can microblogging be used to facilitate an online community of practice and increase dialogic thinking?

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RESEARCH REPORT

How can microblogging be used to facilitate an online community of practice and increase dialogic thinking?

Karolyn Feliciani

Background and purpose

This inquiry aims to explore what happens when microblogging is introduced as a tool to facilitate an online community of practice. For many of our schools, online teaching during the pandemic was the predominant way of teaching and although some have now resumed face-to-face teaching many are still using a blended learning approach. Teachers are concerned that when teaching online some students are no longer participating and that this is hindering their progress.

Aims

The goal was to identify whether Talkwall (a microblogging tool) could create opportunities for online teaching to become more dialogic. Any change would be measured by the coding of group dialogue based on the T-SEDA analysis framework (T-SEDA Collective 2021).

Study design or methodology

The intervention involved three teachers based in Pakistan who were willing to discuss how they use a scheme of work over the course of two sessions. The first session was held over Teams with a question and answer format. The second session was also held over Teams but with the added intervention of a microblogging tool to help create a more dialogic environment. Teachers were also introduced to the concept of ground rules for talk.

Findings

The initial findings indicate that instances of inviting others to build upon ideas increased with the use of Talkwall. Contributions also increased among the participants as they began to lead the conversation while using the microblogging tool and implementing the ground rules discussed.

Conclusions, originality, value and implications

The use of microblogging is something for teachers to consider using when online teaching to help create a more dialogic environment in conjunction with dialogic pedagogical strategies.

Keywords: T-SEDA; dialogue; microblogging; online teaching; ground rules; teacher professional development.

Context

My organisation creates and delivers education programmes, curricula, tests, and qualifications around the world. These are all supported by print and digital teaching and learning resources. The organisation specialises in international education and assessment, publishing, and research. I have an interest in developing materials for teachers and students that support dialogic thinking (Mercer et al., 2019) and exploring ways in which we can use digital technology to host our resources and provide teachers with a range of technology to support their planning. I recruited participants through the Senior Education Manager for Pakistan, gaining approval first from the Country Director. The Senior Education Manager emailed potential participants the Teacher Information sheet (Appendix B) to ask if they would be interested in taking part. If they agreed I was sent their contact details. The participant group comprised of three teachers, one male, and two female. One teacher had only been teaching a couple of years, the other two were more experienced each having over four years of teaching in the classroom. The teachers were based in Pakistan and all of them provided subject syllabus training to other teachers in the local area through my organisation and were classroom teachers for O Level subjects. The inquiry took place during two online meetings hosted by Teams from my home.

Motivation, focus and questions

When considering the focus of my inquiry, I completed the online self-audit survey after the Day School in April. This Day School was part of the Professional Practitioner Development Transforming Practice: Dialogue in Education, module. I reflected on how we encourage dialogic thinking through our current curriculum and how our international teachers had transitioned to online teaching during the Covid-19 lockdown (Appendix A). As the pandemic forced educators to use digital technology for teaching it became a priority to replace face-to-face classroom teaching with online teaching platforms. Even though most of our schools have resumed face-to-face teaching, some of the methods and tools for online teaching are still being used and many teachers have integrated these into their day-to-day teaching practice.

A challenge for my organisation is that for some international schools there is a very real threat that if Covid-19 cases surge then digital technology will need to become the predominant way of teaching again. Selwyn (2016) defined digital technologies to be best understood as 'mediating' non-digital processes and concluded that while they make some new things possible, they introduce new limitations at the same time.

Regarding limitations, some of our teachers who are now back teaching face-to-face are concerned that when teaching online lessons, students who remained silent were hindering their progress and

not coming together to reach a collective understanding that is supportive and reciprocal (Mercer & Hodgkinson, 2008). Although teachers now have a plethora of online teaching tools to choose from, not all support creating a shared dialogic space for teachers and students to co-construct knowledge together. A dialogic shared space in this context means the space is characterised by a lack of certainty and contains multiple perspectives. As Carrillo & Flores (2020) suggest, there is now a need for a comprehensive view of online education pedagogy that integrates technology to support teaching and learning.

Considering the role of digital technology in supporting classroom dialogue and how it can help students' thinking to emerge over time led to the focus of my inquiry: how digital technology can be used to facilitate dialogic thinking with instruction and guidance (Mercer et al., 2019).

Bajaj et al (2021) suggest that when choosing digital technology, ease of use positively influences teachers' attitudes towards online teaching. Teams was a good option for the first stage of my inquiry, as the technology needed to be simple and familiar to use. I was interested to see if by introducing another layer of technology later in the inquiry and taking a multimodal approach to discussion if we could increase dialogic thinking further among participants. Talkwall seemed to meet this criterion and be a suitable intervention.

Developed by the University of Oslo, Talkwall is a co-located microblogging tool. It is designed to be used in real time with students in the classroom, to promote a more dialogic discussion and encourage engagement (Amundrud et al., 2022). Talkwall was initially designed to engage students in collective interaction by directly involving technology in a high-quality discussion. This involved formulating a question or challenge for the students. I considered Talking Points (Dawes, 2008) to be a suitable option here as the dialogic space or virtual 'wall' should begin with a relationship where it is possible to shape the attention of the other, by drawing attention to a question or posing a challenge (Wegerif, 2020). Participants then work together to post messages to the shared 'feed'. The messages can be arranged in order of preference or filtered depending upon the nature of the conversation to support the immediate visualisation of ideas (Warwick, 2020). In this case, the dialogic space would be about opening the conversation into a long-term dialogue and then widening that space by actively seeking out a range of views.

It was important to my inquiry that teachers understood what high-quality discussion looked like before using Talkwall. Vygotsky (1986), a sociocultural theorist, discusses learning through and with cultural tools, of which language is the most important. Vygotsky emphasises by using language as a cultural tool, we transform what is in the culture through the mechanism of language, and these tools are extended when we think about technology. Dialogic education takes Vygotsky further. An

increasing amount of research points to talk as being an essential part of teaching and learning and that it should not be treated as incidental in the classroom (Alexander, 2020).

By using digital technology to support the discussion, I hoped to illustrate how participants can teach their students to take part in a living dialogue. Rather than focussing on transmitting knowledge from the past, digital technology can help transport students to a place where they construct dialogue in the present (Wegerif, 2020). If it is through teacher talk that student talk is mainly prompted, accelerated and enriched then by creating a dialogic space for teachers to discuss our support products we can practice Alexander's principles of dialogic teaching (Appendix D). By explicitly referring to how these principles correlated to what we were actively doing they may then become embedded in the participants' teaching practice.

To encourage dialogic thinking, it was essential that the topic for discussion was purposeful and structured with a specific learning goal in mind (Alexander, 2020). For my context, an online community of practice where teachers can share ideas about how they use our schemes of work was relevant. The purpose was to provide teachers with a framework bringing together educational research and their teaching practice, while providing them with a model similar to an online classroom situation (Buysse et al., 2003). As members of a community of practice, I aimed to demonstrate what effective dialogue using digital technology could look like and provide teachers with strategies to use with their students.

Mercer et al. (2019) highlight the importance of ground rules for encouraging dialogue and advocate for the time during lessons where these are established. This was an opportunity to discuss what ground rules might look like not only in this context but within the teachers' contexts as well. Highlighting ground rules for talk could provide an example of how teachers can make use of dialogic practices in their contexts (Dawes, 2008).

When beginning the inquiry, I hoped to see constructive dialogue between teachers that was supported by digital technology and exemplified by building on ideas, invite to build upon ideas and making reasoning explicit. I was interested to observe the participant's interactions when using Teams and note any changes when Talkwall was introduced and a multimodal approach taken. Success would be measured by observing these dialogic structures and by teachers providing positive feedback from the experience.

Inquiry plan and activities

Before Session 1, I emailed teachers research around communities of practice and ground rules. While I knew the concept of ground rules to be important, I needed to be careful not to offend the teachers by treating them as students. I embedded this implicitly by emailing them examples of

ground rules that could be adapted to use in their context. We had a conversation during Session 1 about whether and how they initiated ground rules in their contexts.

I chose Teams to facilitate Session 1 as I wanted to use a digital tool that was simple and familiar to all participants. This first session was a baseline observation of one hour to observe the dialogue between teachers and gather some initial data. During Session 1 participants were introduced to Alexander's principles of dialogic teaching **(Appendix D)**. I demonstrated how these principles correlated to our discussion and could be implemented with their students. The Teams meeting was audio recorded, then transcribed and coded using the T-SEDA coding template 2A **(Appendix E)**.

During this first session, I introduced Talkwall and asked teachers to make contributions throughout the week to continue our discussion. A demonstration was given over Teams. I wanted Talkwall to be used in the way it was typically designed for and to see what would happen if I took a multimodal approach to the discussion. I posted a talking point on the wall stemming from our conversation and emailed teachers research about talking points and the benefits of using technology in the classroom. I hoped that teachers would make multiple contributions throughout the week before Session 2, but only three contributions were posted, as it was coming to the end of term in Pakistan and teachers were becoming increasingly busy.

Session 2 was hosted a week later and lasted one hour. During this session, I wanted to observe any changes that happened when we used both Talkwall and Teams for our discussion. The Teams meeting was audio recorded, then transcribed and coded using the T-SEDA coding template 2A.

At the end of the second data collection, I took a screenshot **(Appendix F)** of some of the contributions made on Talkwall.

Ethical considerations and relationships

My inquiry required me to work with teachers, meaning there were ethical implications to be taken into consideration, including reading the Ethical Guidelines for Educational Research (BERA 2018). I completed the Ethics module in the Research Methods course, and the Faculty Ethical Clearance Checklist. I then obtained permission from the Country Director and Senior Education Manager for my organisation in Pakistan to proceed with the inquiry. The checklist requested that informed consent be obtained to carry out my inquiry. I was put in touch with the Regional Coordinator for Pakistan who contacted teachers to gage availability and interest to take part in the inquiry. A condition from the Country Director was that the inquiry take place before the end of the school year and carried out within the month of June, as teachers were busy with report writing. I therefore made sure dates and times were scheduled around teachers' commitments and we planned the dates and time of Session 2 at the end of Session 1 to ensure a best fit for all. Teachers were made aware throughout the

inquiry that they were able to withdraw at any time. When the initial pool of teachers had been identified, I emailed them a Teacher Information sheet (Appendix B) explaining the purpose and timeline of the inquiry and what the inquiry would involve. I ensured teachers understood they were consenting to the audio recording of the sessions being used and that any data used in the report would be anonymised and their names redacted. The Teacher Information sheet included a consent form to be signed and returned and teachers were able to contact either me or my supervisor if they had any questions before signing. It was important teachers understood the content of the consent form and what they were agreeing to. Of the eight teachers contacted, three were able to participate and signed the consent form. Finally, it was ethically important to consider how the benefits of the research outweigh the ethical implications of collecting the data during Covid-19. I therefore submitted a short narrative (Appendix C) to my supervisor explaining my reasons for carrying out the research and why I felt it would benefit the teachers and the students in their classrooms.

Findings

The analysis of the baseline observation (*Figure 1*) shows that during Session 1, there was a total of 199 talk turns taken over 56 minutes. As the Researcher, I had a higher level of talk turns than I had both anticipated and wanted. The structure of this session appeared to be interview-like, where I was asking the questions and teachers took turns to respond.

Teacher 3 took the greatest number of talk turns. This was not surprising as they were new to the profession and very keen to share thoughts and ideas. I wondered about the impact of this on the other participants as this teacher was keen to address me directly when talking and the conversation felt siloed at times. There was not much conversation between teachers without me directing it.

Session 2 showed an increase in talk turns of 33% with a total of 297 over 60 minutes. This increase was mainly among participants. When using Talkwall, Teacher 2 was very keen to contribute. They shared they were quite comfortable with using technology and willing to try out different strategies for interacting with it (Bajaj et al., 2021). Along with the implementation of ground rules discussed previously, teachers had implicitly formed a type of 'social contract' (Dillenbourg, 1999) helping each other understand the conditions in which the interactions take place and appreciating that even though others may have more experience with technology, they are all involved in the process of learning together.

Another observation from Session 2 was that participants commented on each other's contributions and offered their own opinion (Alexander, 2020). An excerpt from Session 2 (Appendix F) shows participants engaging with other participants' messages on Talkwall and commenting on them. In line

4, Teacher 3 comments at some length about what they had responded to on the 'wall' and noted a contribution made by Teacher 2:

> Teacher 3: '… and then [Teacher 2] added that to implement the schemes of work while teaching you need to start by adding a few critical thinking based questions…'.

In line 7 Teacher 3 invites others to contribute: 'I don't know if anyone else thinks so?'

Participants demonstrated a tendency to switch from verbal to text simultaneously to create meaning, with the verbal comments being mainly focused on the text. Using Talkwall to scaffold the talk for learning gave participants more opportunities to think collectively and co-construct new knowledge.

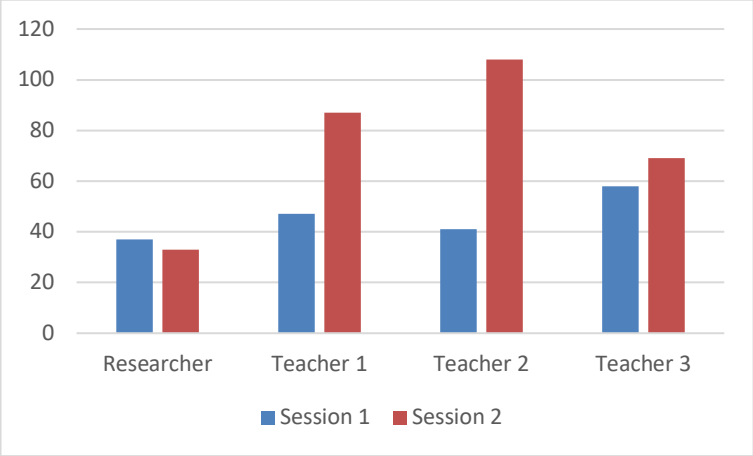

Figure 1: Number of turns

Regarding talk categories, during Session 1 participants did build upon each other's ideas but there were very few invitations to build on ideas. When teachers were asked about whether they use a hard copy or the online version of a scheme of work, Teacher 1 responded:

> '…Sometimes if we just want to just look at things just in a hurry, then we prefer online things. But when we actually working we need hard copies, yes.'

Teacher 3 continued the discussion by adding:

> '… having the editable version is really helpful of course, because we tend to annotate and we tend to modify it as per the feedback we receive after the classes …' **(Appendix E, lines 23-24)**.

The dialogue between the participants adds another opinion to the discussion, but there is no invitation to build upon this or reasoning taking place.

The only invite to reason happened when I requested further explanation about Teacher 3's comment on mindset: 'Why erm do you think that might be?' **(Appendix E, line 10)**.

In the excerpt from Session 1 there are 11 examples of building on own/other's ideas but rarely does it go beyond this to become more dialogic with only 4 examples of invite to build on ideas.

During Session 2, after introducing Talkwall to support and create a multimodal approach to discussion, occurrences of invitations to build on ideas increased, as did invite reasoning (*Figure 2*). Building on own/other's ideas decreased by 27% during Session 2. I was surprised to see this, but as I analysed the rest of the categories I saw invite to build on ideas had increased by 69%. Participants were now inviting each other to build on ideas. I observed my number of turns had decreased slightly and other participants had increased. Teachers were now mainly having a discussion among themselves. I was there to guide the conversation as needed.

Invite reasoning had increased by 42% in Session 2. I was hoping this would show more of an increase, but understand it takes time to embed these skills.

An unexpected observation was the discussion content. Initially, I planned to analyse only the talk categories.

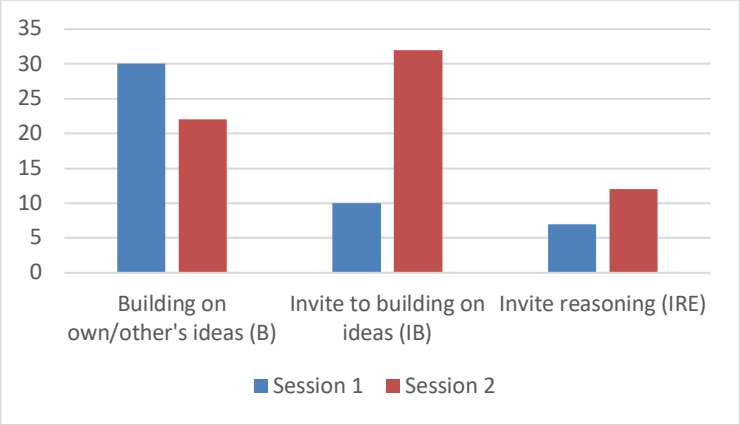

Figure 2: Dialogic talk moves by category

As mentioned at the beginning of this section, Session 1 seemed more of an interview exchange. Even though the conversation was useful and I was gaining participants' opinions around the schemes of work, I had planned for it to be more of a discussion among the teachers. When I introduced Talkwall to support the discussion this changed the angle of the content as well.

By taking a multimodal approach to discussion, Talkwall supported the conversation in becoming more focused and precise. This could be because there is a character limit set on the 'wall' and therefore participants need to think more carefully about what the content of their contributions are. Talkwall also serves as an assistive memory. Participants had opportunities to move messages around and add further ones. This invoked excitement among participants as seen in the below excerpt.

> Teacher 3: '[Teacher 1] has put in a new addition, a new contribution. I'm excited with this.'

Teacher 3 becomes eager to contribute further when they notice another participant is adding a further contribution. The anticipation of the contribution heightens the discussion and pushes it forward to where Teacher 1 suggests reordering the contributions on the wall.

> Teacher 1: '… Do you think we have the right comments at the top as the most important or is another way to order them?'
> Teacher 3: 'Let's reorder them.'
> Teacher 1: 'Yeah. Ok. Please excuse my typos. We can do importance of subject.' **(Appendix F, lines 15-19)**

It could be argued that Talkwall has the affordance of allowing a conversation to not only develop further but to develop dialogically (Amundrud et al., 2022)., in conjunction with dialogic pedagogical strategies. Using digital technology to support a dialogic discussion becomes a means to an end rather than the end in itself.

Changes to practice

This inquiry is intended to provide a foundation for future work in my context of providing curriculum support for our teachers. The biggest impact of this inquiry was seeing that digital technology is effective in supporting dialogic discussion and how creating multimodal opportunities can increase dialogic thinking further. Teacher 2 best summed up any future changes to practice:

> 'Because the learner has changed, the learner is adapting to a different style of learning, and that has to be incorporated into the system itself'.

By adapting our support materials, we can help teachers with creating more dialogic activities to use with their students.

Reflective evaluation on the process

Introducing Talkwall to support discussion was an aspect of my inquiry that worked well. Using digital technology had a positive impact and encouraged a more dialogic discussion.

I was pleased to have the support of my division and work colleagues during this inquiry. The inquiry took place during a very busy time of year for our teachers. If it were not for the continued support of my colleagues then this would have been very difficult to carry out.

One surprise was how much information I could interpret from the T-SEDA coding template. I was not familiar with transcribing and coding before this module. There was so much more to say than I first thought. I was tempted when coding to become drawn into analysing dialogue strands I was not observing and needed to remember they were not the focus of my inquiry.

Another surprise was it became clear participants needed further guided practice of using Talkwall. I had thought an initial demonstration and some working instructions would suffice, but practical guidance was also required.

For the external challenges encountered, I would have liked more participants for the inquiry. I underestimated how long it would take for potential participants to respond to the email asking if they would like to take part and then correctly complete the consent form and send it back.

I was disappointed with the talking point I chose for Talkwall. I had a different one planned before the first session. Due to the way the conversation was evolving, I adapted it to become more relevant, but it transpired that teachers were agreeing with rather than debating it.

Finally, I decided to use audio recordings during this inquiry. This worked well, but after talking to others on the module and hearing some of their inquiries, I did consider the differences between having an audio recording and a video recording and how much additional data I may have been able to obtain from non-verbal cues. I will take this into consideration for further research.

Next steps

This inquiry suggests that by using digital technology, discussion can be more dialogic and beneficial to teachers and their students.

Next steps include:

- using digital technology to support further discussion with teachers.
- reaching out to our research team to work with them and our teachers.
- recruiting teachers from a wider range of syllabuses and regions, especially where teaching may still be online.

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Supplementary materials/resources

I drew on the idea of Robin Alexander's principles of dialogic discussion for my resource. I wanted to show how these principles can be applied to a community of practice context and be adapted to use in the classroom (Alexander, 2020). I created a slide (Appendix D) to introduce and scaffold the use of these principles and invited discussion around them. We referred to them frequently in the sessions

to check where we were applying these principles and discuss how they could be applied in the classroom.

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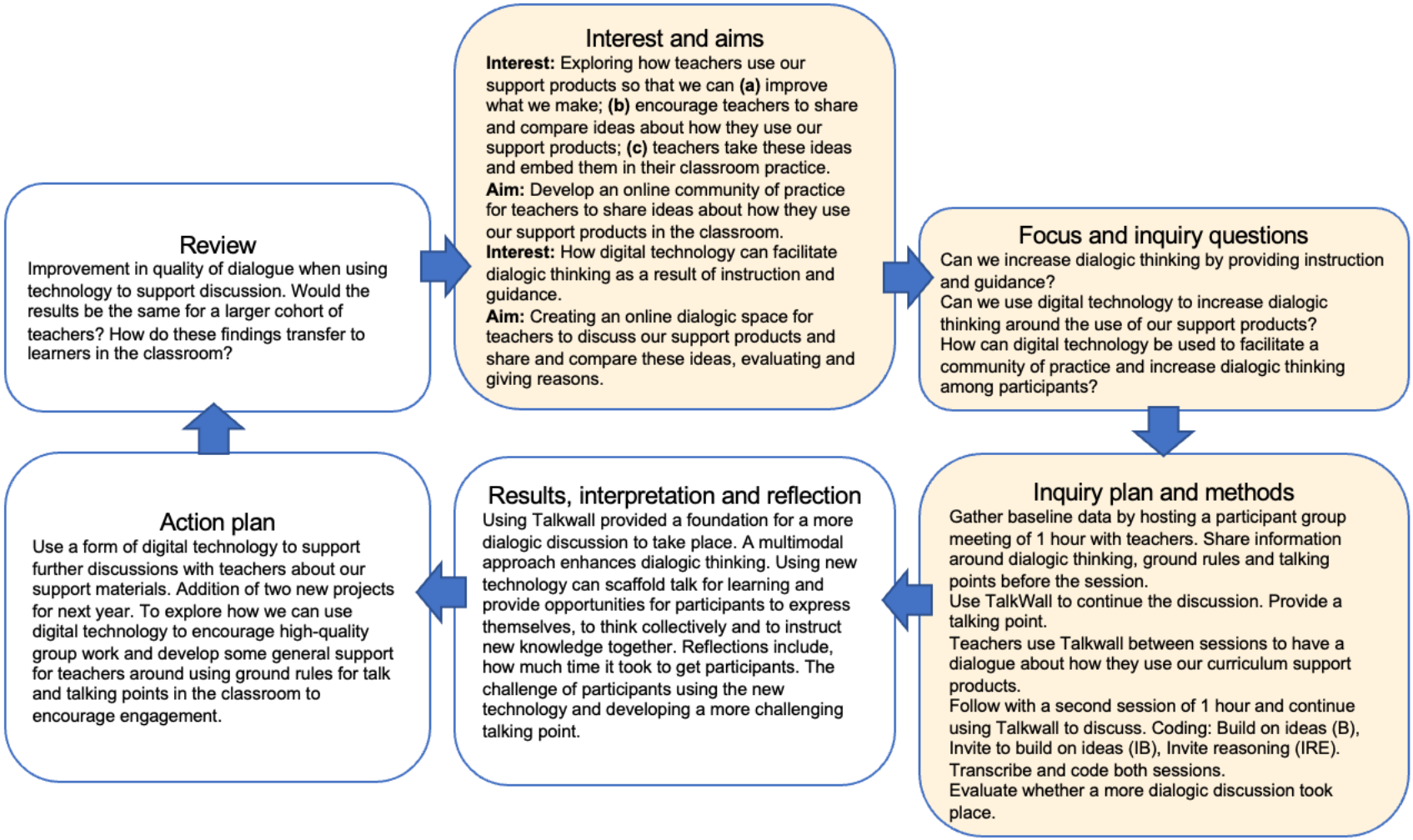
Appendix A: Reflective cycle



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Appendix B: Teacher Information sheet

University of Cambridge

Faculty of Education

184 Hills Rd, Cambridge CB2 8PQ
Tel: +44(0) 01223 767600
Graduate@educ.cam.ac.uk www.educ.cam.ac.uk

Research Project: How can microblogging facilitate an online community of practice and increase dialogic thinking

The University of Cambridge has strict ethical procedures on conducting ethical research with teachers, consistent with current British Educational Research Association guidelines: http://bit.ly/BERAethics2018. Throughout the research you will be able to refuse to participate at any time.

Such reflective practices can be a beneficial process in teacher professional development. By experiencing a dialogic approach during this inquiry, we expect teachers to have the opportunity to reflect on their own practice and consider how they might use some of these strategies in their own classroom. We will also discuss how you might use some of these strategies in the classroom, including Talkwall, and how learners might benefit from such an approach.

We will request your consent to use the audio recordings of the online sessions and the typed dialogue posted on Talkwall to analyse for research purposes. The records will be kept confidential and the data will be anonymized. This means that in subsequent use of the audio recorded material, your name, your school's name and any personal information will not be used in any reports resulting from this study. It should, however, be acknowledged that the name of the institution may be identifiable in the final report as the research context will be provided. All digital files, transcripts and summaries will be given codes and stored securely, and only my supervisor and I will be allowed to review the recorded data. The anonymized data will be stored for a maximum of 5 years and the audio recordings and data gathered on Talkwall will be deleted after 2 years.

The digital technology, Talkwall, used for discussion will be accessible by a pin number only that I will create and email to you in advance of the task. There will be no need for you to create any accounts that require a username and/or password.

This study has been reviewed by the University of Cambridge Faculty of Education Research Ethics Committee and has received ethics clearance.

If you feel you would like to take part in the study, or need more information about what is involved, please contact me. If you feel you are able to participate, I would be grateful if you would complete the consent form below, and return it to me via email by…

Appendix C: Teacher Consent Form

University of Cambridge
Faculty of Education

184 Hills Rd, Cambridge CB2 8PQ
Tel: +44(0) 01223 767600
Graduate@educ.cam.ac.uk www.educ.cam.ac.uk

Teacher Consent Form

Project Title: How can microblogging facilitate an online community of practice and increase dialogic thinking

☐ I, the undersigned, have read and understood the participant information sheet about the study.

☐ I have had the opportunity to ask questions and get satisfactory answers about the study.

☐ I understand that I have the right to withdraw from the study without any consequences at any point of the research.

☐ I understand who will have access to the information provided and what will happen to the data at the end of the study.

☐ I understand that this study has been reviewed by and received ethics clearance through the University of Cambridge Faculty of Education Research Ethics Committee and if need be, I can find out more about this research study by contacting the researcher or their supervisor at the department.

☐ I consent to take part in two small group online discussions.

☐ I consent for these discussions to be audio-recorded.

☐ I consent to take part in written discussions on Talkwall.

☐ I consent for quotes I've given to be used in writing up about the work.

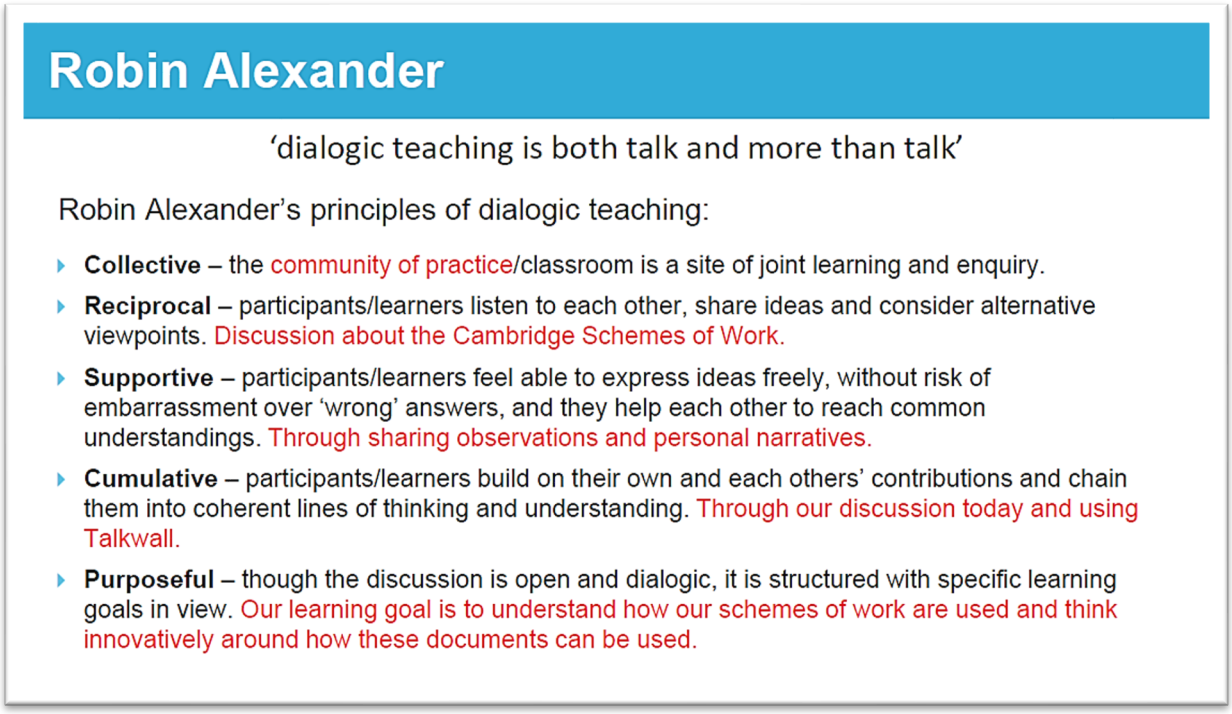
Fully informed of my rights, I agree to participate in the study, carried out by Karolyn Feliciani, a Masters student at the Faculty of Education, University of Cambridge.

Name of teacher:
Signature:
Date:

Name of researcher:
Signature:
Date:

Appendix D: Robin Alexander's principles of dialogic teaching

This resource can be used as the basis for a discussion around dialogic teaching. For example, the slide was used in the context of demonstrating how Alexander's principles could be used in a learning environment, while demonstrating the principles at the same time. To use in your own context, remove the red text and read each principle with your participants. Ask participants how each principle relates to the context they are in right now (teacher conference/training for example) and how they might then apply them in the classroom using an assortment of activities.



Appendix E: T-SEDA 2A coding template and reflection – Sample from observation 1

Codes:

B = building on own/other's ideas
IB = Invite building on ideas
IRE = Invite reasoning

Nº	Speaker	Turn	B	IB	IRE	Comments
1	Researcher	What would be useful? Do you think lesson plans would be useful rather than a scheme of work? What would be helpful do you think?		IB		
2	Teacher 1	Goodness, I would say, ok, ok, ok. Please continue.				Teacher 1 was interrupted by Teacher 2 at this point.
3	Teacher 2	So for me, like when you first sorry, you go ahead. No, no, please go ahead.				
4	Teacher 2	No, I was gonna say for me like I remember the first time when I looked at it, I felt very overwhelmed by the document because there was, like, so much information there. And, you know, like when I'm looking at just one topic and there was so much that I hadn't done in that topic. If there could be a more detailed version of the activity itself also it would be easier to translate it in a a trainer workshop.				
5	Teacher 1	Yeah you can. Yes, I I would definitely say it looks very nice when we get a good planning thing right, warm up activities, plenary and activities, but sometimes it's it's difficult to continue with everything, but it's fine if we go with the 50% of scheme of work or the planning, whatever is going on, we are not talking about that 100%. If we can add few videos that how the the one the person who actually working on this scheme of work, how they want us to implement all these things. Sometimes being the trainer being a a teacher, we also need a line or	B			

Nº	Speaker	Turn	B	IB	IRE	Comments
		guideline thing that how we can execute all the things what what kind of execution they are actually.				
6	Teacher 3	Caroline, to answer your question, I I do not think that we need lesson plans instead of the scheme of work.	B			
7	Researcher	Mm-hmm, explain further please.			IRE	
8	Teacher 2	Umm. I do not know.				
9	Teacher 3	You know, my understanding is that schemes of work are just a helping document. It's not something that rigorously needs to be followed. It's just therefore you to indulge in a few topics or different teaching methodologies. I totally understand that. But, you know, the problem is the mindset here that couple mentioned earlier.	B			
10	Researcher	Why erm do you think that might be?			IRE	
11	Teacher 3	Because we are not able to act as individual. For us lessons need to be just question and answer. No talking otherwise.	B			
12	Researcher	So the students talk to the teacher and not the the other students?		IB		
13	Teacher 3	Exactly. The teacher is the person with knowledge.	B			
14	Researcher	Ok. Thank you. And I have one more question for you at the moment around the schemes of work and then we can look at the, the technology that we're gonna use to discuss further and and that was about. So at the moment we provide a Word document of a scheme of work and and a pdf document. And obviously the idea of the Word document is that is editable and so you can add to it or whatever you want to do with it.				
15	Teacher 3	Yeah				
16	Teacher 3	Ok				

Nº	Speaker	Turn	B	IB	IRE	Comments
17	Researcher	But you know, do teachers maybe just just online as it is, or are they printed off?		IB		
18	Teacher 3	Ok				
19	Teacher 2	Personally I have it online, but I know a lot of teachers are more comfortable with hard copies of things and that's just goes for, I think more as everyone. You just you know when it's there it just makes more sense when you're looking at it. But personally I have it online.	B			
20	Teacher 1	Yes, sometimes it happens.				
21	Researcher	Ok				
22	Teacher 3	Ummm. Sorry, Teacher 1 please.		IB		Teacher 1 said something inaudible here.
23	Teacher 1	Yes, it depends. It depends on the planning. If right now we are we are, we are working on the whole plan then yes, we need hard copies. Sometimes if we just want to just look at things just in a hurry, then we just prefer online things. But when we actually working we need hard copies, yes.	B			
24	Teacher 3	Carrying having the editable version is really helpful of course, because we tend to annotate and we tend to modify it as per the feedback we receive after the classes taken place. So that's there and of course a hard copy is necessary because at times during the lecture you can't keep on referring to a soft copy. It's much easier to have that hard copy in hand and that's easier to.	B			
25	Researcher	Yeah				
26	Teacher 3	But access. But of course we would need the soft copy for the web ,links etc. A lot of teaching now as we said it lecture based. So it's the multimedia is available.				

Nº	Speaker	Turn	B	IB	IRE	Comments
27	Teacher 1	And sometimes you add your own words and everything.	B			
28	Researcher	Helpful to see it like that, I think.	B			
29	Teacher 1	You need something written in front of you.	B			
30	Researcher	Yes that makes sense.				

Appendix F: T-SEDA 2A coding template and reflection – Sample from observation 2

Codes:

B = building on own/other's ideas
IB = Invite building on ideas
IRE = Invite reasoning

Nº	Speaker	Turn	B	IB	IRE	Comments
1	Researcher	So you've done your one, then you've got the wall as as you think. Do you wanna talk this through the the order you've got the contributions in and say why?		IB	IRE	
2	Teacher 3	Of course. Uh.				
3	Teacher 3	Sure. [Teacher 1] actually wrote that. I agree. I find that sometimes teachers lack the understanding of the time to execute the suggested activities in a thought out plan manner.	B			Acknowledges Teacher 1's contribution on Talkwall.
4	Teacher 3	What I responded to that was that timings are left to the judgment of the teacher as mentioned in the introduction of the scheme of work, as they will vary according to the level of the learners in the class size. Hence it can be used more for differentiation. So that's how I would want to build on that thought process that the schemes of work, whether they should contain time or not for a certain activity and then [Teacher 2] added that to implement the schemes of work while teaching you need to start by adding a few critical thinking based questions and innovative starting activity like 3 to one.	B			

Nº	Speaker	Turn	B	IB	IRE	Comments
5	Teacher 3	And then she's elaborated on that. So that is 1 stream of thought that is running in my mind. And the next one should I continue?				
6	Researcher	Yeah. Yeah, please, unless anyone would like to comment so far?		IB		
7	Teacher 3	OK. The second one was that I in response to what's written on the top mentioned that implementation of an activity based on interactive learning could be limited by the availability of digital or technological resources available to the teacher and learners in the classroom that you know the scheme of work would be. And then [Teacher 2] responded to that. Yes, I agree that interactive teaching plays an important part in boosting the learners motivation and engagement. Still, it is not everyone's fault. It takes a lot of organizational skills and proper working on the scheme of work, which is a rare thing, I don't know if anyone else thinks so?	B	IB		
8	Teacher 2	That's right, I agree.				
9	Researcher	Thank you. Has anybody else anything to add?		IB		
10	Researcher	Are they like you can still add contributions down the side, I think. You can also move them around if you have an order of preference.	B			
11	Teacher 3	Yes, we can, yeah.				
12	Researcher	Anybody else got anything they want to add down the side and			IRE	

Nº	Speaker	Turn	B	IB	IRE	Comments
		explain why they have have arrived at the conclusion?				
13	Researcher	Sorry [Teacher 2].				
14	Teacher 2	Trying to share my screen as well.				
15	Teacher 3	[Teacher 1] has put in a new addition, a new contribution. I'm excited with this.		IB		
16	Researcher	Yeah, just seen that.				
17	Teacher 1	Yeah, I'm just at editing it again. It wait? Yeah, accidentally paid posted it. Do you think we have the right comments at the top as the most important or is another way to order them?			IRE	
18	Teacher 3	Let's reorder them.		IB		
19	Teacher 1	Yeah. OK. Please excuse my typos. We can do importance of subject.	B			Teacher 1 shifts some of the messages around on Talkwall.
20	Teacher 1	I wanted to say that in languages especially it can be hard to articulate what is required from the scheme of work. New teachers can feel very overwhelmed.	B			
21	Teacher 2	Do you mean overwhelmed because of the amount of content or or because they do not not understand how to teach it?			IRE	
22	Teacher 1	I would say because there's so much of it in the one document.	B			
23	Researcher	That's really interesting, so what do you think might be helpful here? To help. I think you've mentioned a few times that the scheme of work has lots content. Does anyone have anything they've tried out so it does doesn't		IB		

Nº	Speaker	Turn	B	IB	IRE	Comments
		seem so overwhelming. The content I think.				
24	Teacher 3	I will have given some parts to the students. And then ask them to build on the activities in the document.	B			
25	Teacher 2	Yeah, I've done this too. I also copy and paste sections of it in planner. Just the bits I need. I don't know if anyone else does the same?		IB		
26	Teacher 1	Sometimes if you use the links. The links in the scheme of work, it can help by giving you a video that exemplifies the activity. Or or shows some helpful think.				
27	Teacher 3	So long as the link works.				
28	Researcher	Yeah we mentioned that before about links. I've written down.				
29	Teacher 3	I think that that flexibility is important like [Teacher 2] said on the Talkwall.	B			
30	Teacher 2	And using the scheme of work as a a roadmap too. So like not too concrete in what you are doing, but you can look at it to guide. [Teacher 3] said on the board.	B			

Camtree

Appendix G: Talkwall