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Digitalised Dialogues Across the Curriculum (DiDiAC)

Investigating the use of a micro-blogging tool in the 'dialogic classroom'

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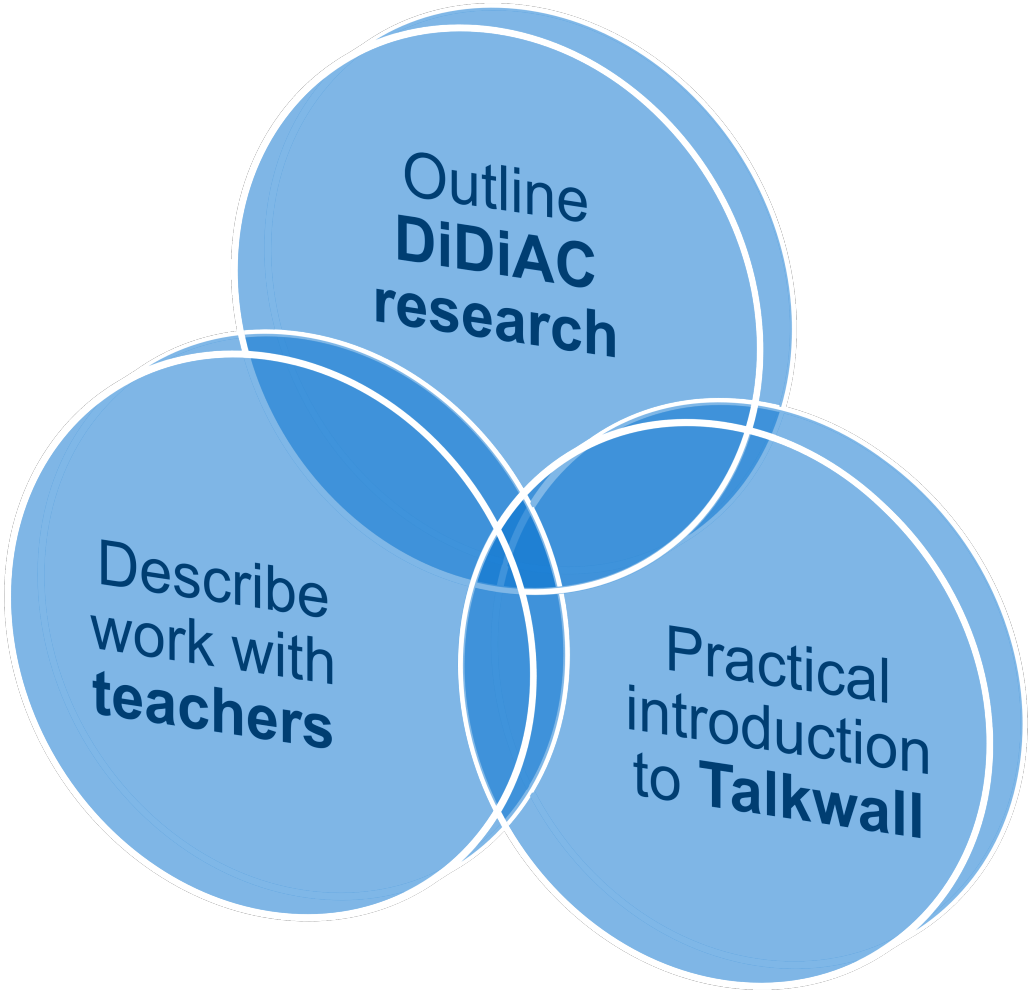
Session overview / aims



Digitalised Dialogues Across the Curriculum (DiDiAC)

Broad Aim: To develop knowledge to understand how students learn in contemporary digitalised schools and across three knowledge domains

DiDiAC considers how a free, browser-based micro-blogging platform – **Talkwall** – affects interactions and dialogue in classrooms

Tool for promoting collective classroom interaction and providing a digital link to the high quality discussion that aids learning

Aligned to a specific research-based approach to developing a dialogic pedagogy in the classroom - '**Thinking Together**'

Why focus on a dialogic pedagogy?

Language is the most ubiquitous, flexible and creative of the meaning-making tools. Teacher's **main pedagogic tool**

Classroom dialogue enables shared cognition that facilitates exchange of ideas, and negotiation of new meanings, in accordance with others' perspectives (Rogoff, 1990). It enables the co-construction of knowledge (Mercer, 2000).

Dialogic pedagogy can stimulate development of critical thinking and reasoning skills (Kuhn, 2015; Mercer, 2013)

Measurable impact on **curricular learning gains** (e.g. Howe & Abedin, 2013)

Classroom dialogue and digital technology

Digital technology represents a powerful tool with the potential to transform classroom activities and support new forms of dialogue

Why? Because it can…

- Facilitate engagement (Beauchamp & Hillier, 2014)
- Support visualisation of 'interthinking' (Gillen et al., 2007)
- Help students to co-construct knowledge (Hennessy, 2011)

Scoping review -> potential to investigate classroom dialogue and its interaction with digital technology

Talkwall involves…

1. Teacher formulating a question or a challenge
2. Students (individually or in groups) posting messages to a shared ‘wall’ (i.e. large screen/projector)
3. Contributions being interactively arranged in various ways

#hashtags and a **short message format** (max 140 chars)

No installation, universal access

Requirements = Wi-Fi (or 3G/4G); devices; large display

Introducing Talkwall

Some key features of Talkwall – 3 activities through the presentation

However…

i. not intending to demonstrate all features of TW

ii. switching between slides and software

iii. 

Activity One:
Introducing www.talkwall.net

In pairs, finish this sentence:

“The use of digital technologies in schools…”

e.g. … should serve to develop students’ learning

Using Talkwall to 'Think Together'

DiDiAC integrates Talkwall and elements of 'Thinking Together' to investigate:

i. how talk and the use of micro-blogging contributions are combined

ii. potential to enhance existing/promote new forms of classroom dialogue and provide a visualisation of 'interthinking'

iii. how reasoning, justification, inference and building on, connecting and challenging ideas are evidenced

iv. skills that need to be attained for students to master digitalised communicative contexts, and how teachers can support this

Design-based approach (4-year project). Teachers as co-researchers.
Phase One = high schools in Norway (*n*=5) and UK (*n*=2); 400 students

Project plan

Technological/pedagogical development

Preparation

Resource development & T-R induction

(April 2016 – Dec 2016)

Phase One

Exploratory empirical research (working with T-Rs and S-Rs)

(Jan 2017 – Dec 2017)

Phase Two

Expanded empirical work (opt-in). Wider distribution of resources

(Jan 2018 – March 2020)

Technological/pedagogical development

Developing design-based interventions

EngageLab – interdisciplinary research-driven development unit:

- > 10 years experience in TEL, DH, Health Informatics
- Participatory approach to pedagogical design
- Iterative shifts between expert knowledge and prototypes

Design-based research (DBR) approach involving collaboration between teachers, researchers and technology developers

UiO : EngageLab
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Developing design-based interventions

DBR involves iterative cycles of :

- assessment; development; design & revision; testing in 'real' settings; data collection; analysis/evaluation; adaptation; theory as output

Engineering TW ***and*** pedagogy:

- tailoring to subject discourses
- creating tasks and activities
- adapting tools and resources

… relate strongly to real-life classroom contexts, and design principles and models will 'reflect the conditions in which they operate'

(Anderson & Shattuck, 2012)

Working with teacher-researchers

Phase One: 8 T-Rs (UK); 24 T-Rs (Norway)

Teacher professional development - building common knowledge of dialogic pedagogy & inducting into the use of Talkwall

Four induction workshops (+ reading/tasks & other activities)

(i) Introduction to dialogue and teacher's role

(ii) Whole-class and group dialogue

(iii) Integrating Talkwall

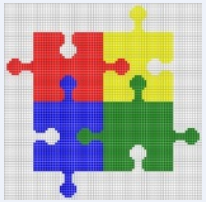
(iv) Planning

Intermediate theory building (Hennessy & Deaney, 2009) - integrating teacher and researcher perspectives through analysis of pedagogic strategies

What makes human cognition distinctive?

We have a ‘social brain’, evolutionarily designed to engage in a complex society

We can not only think individually, we can think collectively



We are able to learn and use language, and this affects our cognitive growth

ways of using language

(the social plane)

ways of thinking

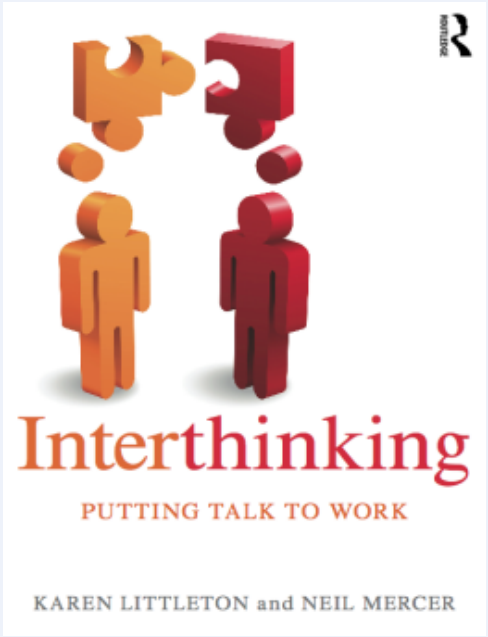
(the psychological plane)

Understanding is not passively accumulated, but rather, is the result of active cognising by the individual

Learners - *individually and socially* - construct understanding for themselves

Language can be seen a tool for collective thinking

We don't just interact with language, we '*interthink*' with it

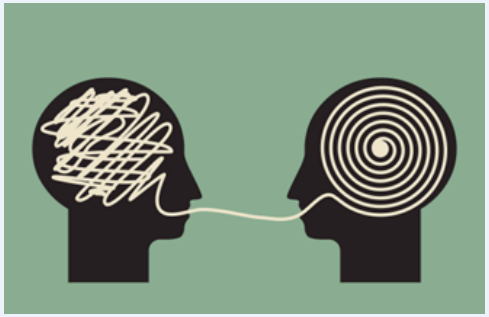


Dialogic pedagogy

Connections between teacher-student and student-student talk are the central concern of advocates of dialogic pedagogies (e.g. Alexander)

Requirements of dialogue, opposed to ‘just talk’, can be thought of as a very specific use of language (e.g.):

- actively commenting and building on other’s ideas
- posing questions – ‘chaining’ questions and answers
- constructing shared interpretations that become ‘common knowledge’



(General) Dialogic teaching strategies

- Modelling ways of using talk for thinking; making talk ‘visible’ to children
- Asking questions structured to promote thoughtful answers (‘why’ & ‘how’ rather than ‘what’)
- Specifically asking children to give reasons for their responses
- Managing turns through shared routines rather than by ‘bidding’; balancing wider participation and extending understanding
- Asking not one, but several students for reasons and justifications for their views before going into a topic (responses are building blocks for further comment, rather than end points)
- Extending ‘wait time’ and withholding evaluations; holding back explanations until existing ideas of at least some students have been heard (where possible linking to issues raised)
- Encouraging extended turns – ‘do you want to say any more about that?’
- Encouraging active listening from those who are not speaking
- Building cumulatively on shared experience; asking students to comment on others’ views
- Balancing whole-class and group activities
- Being responsive to changing circumstances – awareness of the pace of learning

A first step - activities to encourage a discussion about talk

Talk scenarios – how do we talk? Interviews. Talking points






A first step in getting students to develop talk for learning in their group interactions is **to develop their metacognitive awareness** of their use of talk in different circumstances

‘Ground rules for talk’

Class talk rules are likely to incorporate several ideas:

- everyone is asked what they think
- there is active listening and respect
- information is shared openly
- questions are asked which keep the discussion going
- ideas are challenged and discussed
- opinions and reasons are offered
- contributions build on what has gone before
- the group works towards an agreement

5D’s ground rules for talk

Everyone should be asked

- what do you think?
- why do you think that?

Everyone’s ideas will be carefully considered

We will look at and listen to the person talking

We will share everything we know

We will try to agree on what to do or say

Activity Two:
Thinking and Talking Together

“How may digital technology impact on classroom dialogue?”

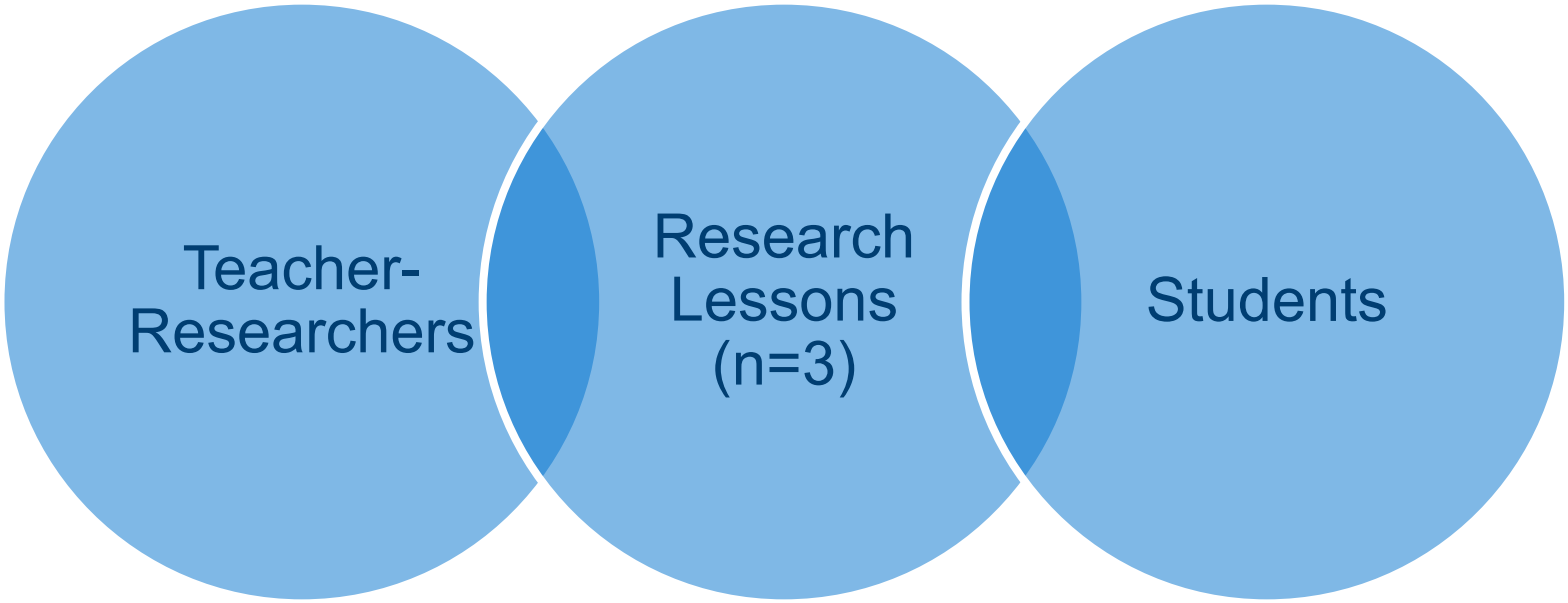
Use **#positive**, **#negative** or **#mixed** to identify the nature of the proposed impact

e.g.

Allowing visualisation of learners’ ideas #positive

Phase One - Methods and Instruments

Overarching RQ (exploratory phase):
How do educational uses of micro-blogging affect interactions and dialogue in classrooms?



Phase One - Methods and Instruments

Teacher-Researchers (T-Rs)

Video recordings of 4 T-R workshops

Recordings of Feedback Sessions following each Research Lesson (n=3)

Online reflective T-R diary

Interviews (end of Phase One)

Considering teacher learning, and teacher perspectives, in relation to dialogic pedagogy and Talkwall

- Design-based element focusing on teacher input to Talkwall development and pedagogic use of the tool
- Examining the extent to which ‘intermediate theory building’ is evident in teacher-researcher/university-researcher interactions

Phase One - Methods and Instruments

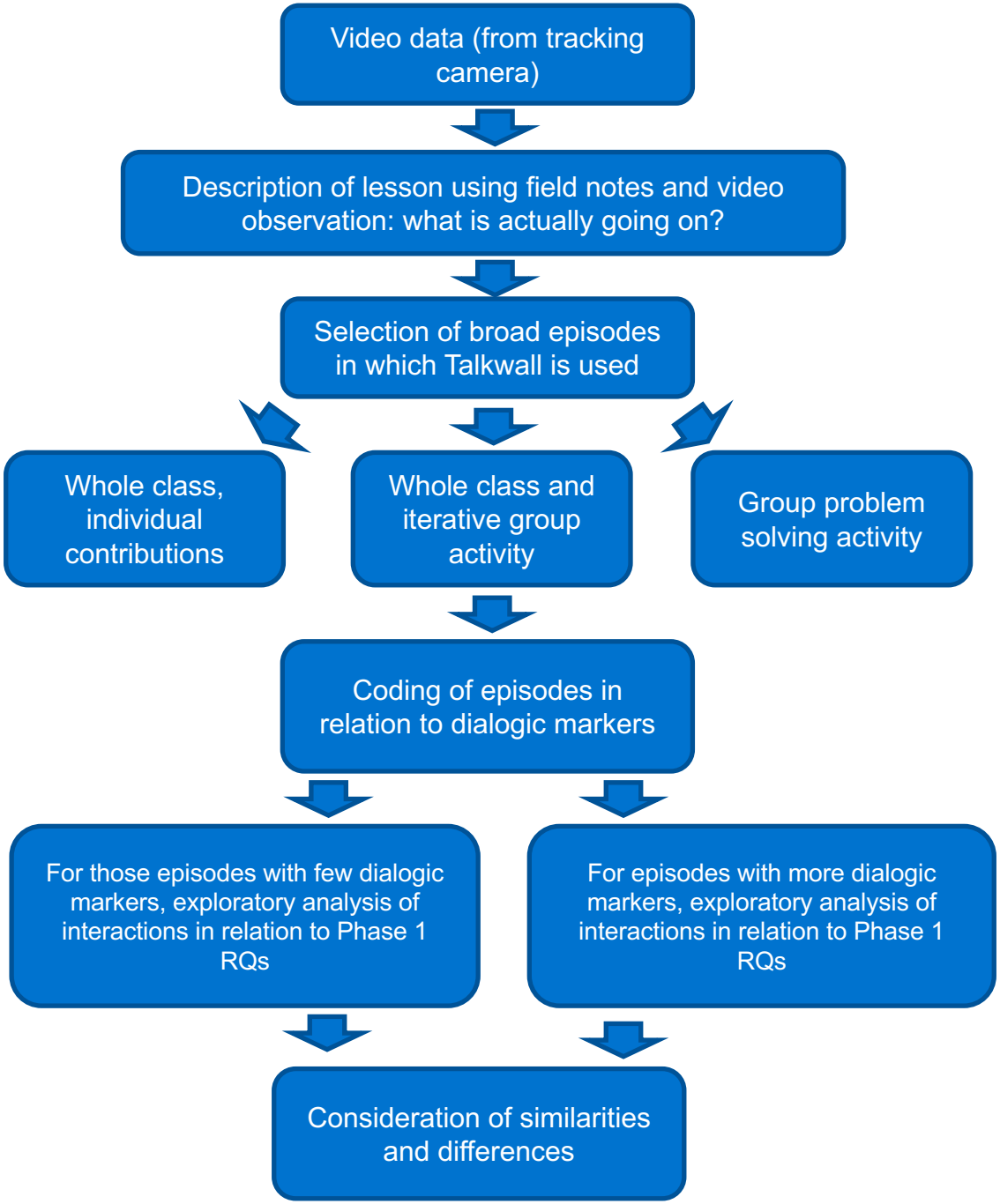
Research Lessons

Two video cameras: • 1 wide angle focused mainly on IWB • 1 tracking camera – moving between teacher (lapel mic) and selected student group (desk mic). During whole class discussions moving between teacher and student speaking.	
Field notes	Basis of descriptive first phase of analysis
Talkwall meta-data	To support analysis of connections between spoken and written components of dialogue

Phase One - Methods and Instruments

Students

Reasoning Test (pre and post)	Measurement of individual reasoning ability (4 areas) • Contribute to selection of groups for video recording in RLs, and later interviewing • Help teachers decide groups for Group Thinking Test • Evaluate test as a tool for later phases
Group Thinking Test (pre and post)	Effects of collaborative interaction on non-verbal reasoning. • To consider development, over Phase 1, of individual non-verbal reasoning and ways in which this relates to group reasoning. • Enables analysis of changed nature of dialogue in group tests over Phase 1.
Focus Group Interviews (after all RLs)	To determine student perspectives


Video data (from tracking camera)
Description of lesson using field notes and video observation: what is actually going on?
Selection of broad episodes in which Talkwall is used
Whole class, individual contributions
Whole class and iterative group activity
Group problem solving activity
Coding of episodes in relation to dialogic markers
For those episodes with few dialogic markers, exploratory analysis of interactions in relation to Phase 1 RQs
For episodes with more dialogic markers, exploratory analysis of interactions in relation to Phase 1 RQs
Consideration of similarities and differences

Activity Three: Group Walls

In small groups:

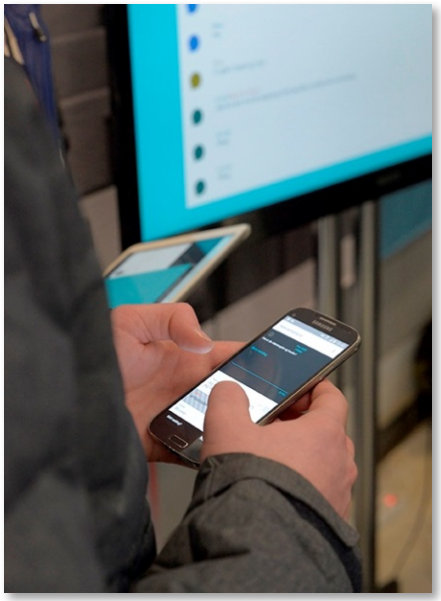
What recommendations or thoughts do your group have about DiDiAC, perhaps particularly regarding #datacollection and #dataananalysis?

No questions yet!

Other features …

‘Tinker’ with Talkwall to discover features available (e.g.):

- Responsiveness
- Filtering by contributor(s)
- Viewing/display student screens
- Refining, elaborating or editing
- Pinning contributions and marking those of particular interest
- Ending session – save TW or email log (distribution of participation; lesson dynamics)



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Digitalised Dialogues with Talkwall

Understanding Classroom Dialogue | How to use Talkwall | DiDiAC blog

Digitalised Dialogues with Talkwall

Resources for enhancing dialogic teaching and learning

Are you considering your 'next move' as a teacher concerned with progressing teaching and learning in your classroom? Are you thinking how to develop talk for learning with your students? Do you want to make use of digital technology as a productive learning partner in your lessons, promoting 21st century skills such as collaboration and critical thinking?

This site provides guidance and support materials to help you to achieve these aims, either as an individual teacher or in professional development work with your colleagues. In Understanding Classroom Dialogue you will find readings and activities that help you to consider how to develop talk for learning in your classroom, and structured materials to guide you through this process. And How to use Talkwall introduces **Talkwall**, a free cross-platform microblogging system developed to support, enhance and possibly transform interactions for learning in the classroom.

“What is a question you want to ask?”

References

Anderson, T., & Shattuck, J. (2012). Design-Based Research: A Decade of Progress in Education Research? *Educational Research, 41*(1), 16-25.

Beauchamp, G., & Hillier, E. (2014). An Evaluation of iPad Implementation Across A Network of Primary Schools in Cardiff: Cardiff Metropolitan University.

Gillen, J., Kleine Staarman, J. K., Littleton, K., Mercer, N., & Twiner, A. (2007). A 'learning revolution'? Investigating pedagogic practice around interactive whiteboards in British primary classrooms. *Learning, Media and Technology, 32*(3), 243-256.

Hennessy, S., & Deaney, R. (2009). " Intermediate Theory" Building: Integrating Multiple Teacher and Researcher Perspectives through In-Depth Video Analysis of Pedagogic Strategies. *Teachers College Record*, *111*(7), 1753-1795.

Hennessy, S. (2011). The role of digital artefacts on the interactive whiteboard in supporting classroom dialogue. *Journal of Computer Assisted Learning, 27*(6), 463-489.

Howe, C., & Abedin, M. (2013). Classroom dialogue: A systematic review across four decades of research. *Cambridge Journal of Education, 43,* 325-356.

Kuhn, D. (2015). Thinking Together and Alone. *Educational Researcher, 44*(1), 46-53.

Mercer, N. (2013). The Social Brain, Language, and Goal-Directed Collective Thinking: A Social Conception of Cognition and Its Implications for Understanding How We Think, Teach, and Learning. *Educational Psychologist, 48*(3), 148-168.

Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context.* Oxford: Oxford University Press.