

Teaching assistant and pupil interactions: The role of repair and topic management in scaffolding learning

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FINAL AUTHOR VERSION (2018)

Background: Teaching assistants (TAs) are taking increasing responsibility for the learning of pupils.

A key instructional skill for TAs is the ability to scaffold learning.

Aim: To explore the interactions of TAs in relation to scaffolding as a theory of instruction.

Methods: Observational data in the form of video was collected. Conversation analysis was used to examine these interactions.

Results: Examples are explored where repair of troubles and construction of topic are highly led by the TA. As such, these interactions cannot be seen to constitute scaffolding.

Conclusions: TAs require training in scaffolding as an instructional strategy and Educational Psychologists (Eps) could play a vital role in this respect.

Background

TAs (also known as paraprofessionals or teacher aides) are present in schools in England in large numbers. They spend extensive time with pupils at risk of losing academic ground, and those with Special Educational Needs and Disabilities (SEND) (Blatchford, Russell, & Webster, 2012). TAs becoming responsible for the education of the most vulnerable pupils is being increasingly seen across the world, for example in the US, Finland, Australia and Ireland (Giangreco, Doyle, & Suter, 2013; Webster & Blatchford, 2013). However, this is reported to have the effect of separating these pupils from the teacher and quantitative research has raised serious questions as to the overall impact of TA support on pupil progress, showing that there is a negative relationship between the

numbers of hours of TA support and the progress of supported pupils in maths, English and science (Blatchford et al., 2012).

TAs are also often responsible for running intervention ('catch up') programmes. Early intervention for poor readers is essential as individual differences in reading do not diminish over time, and poor readers are less likely to engage independently with texts, further hampering their progress (Mol & Bus, 2011). These interventions should focus on supporting word recognition and comprehension skills, as well as the development of related cognitive skills (Bast & Reitsma, 1998; Verhoeven & Leeuwe, 2008).

In order to prevent the pupil becoming dependent on adult support (which is likely to contribute to negative progress) this paper proposes that careful consideration is given to the type of support that TAs provide. Teacher/pupil interaction which focuses on scaffolding has been shown to lead to positive outcomes (Mercer & Littleton, 2007; Van de Pol, Volman, & Beishuizen, 2010). The reciprocal teaching of reading has been shown to positively impact on pupil progress. The teacher interaction continuously adjusts to the student's current need (providing scaffolding), and joint construction of understanding is built amongst the group. A close relationship between improvement in dialogue and performance in tests has been noted (Palincsar & Brown, 1984). The requirement of pupils to explain, elaborate on, and defend responses make changes in conceptual understanding more likely, and there is a strong focus on procedural understanding rather than reproductive learning (Brown & Palincsar, 1989). In addition, the group situation provides greater opportunities for pupils to contribute, and to be involved at a level appropriate to their understanding (Brown & Palincsar, 1989).

Scaffolding is the most suitable theory of instruction for TAs since they work mainly one-to-one or in small groups and the intention should be to fade the amount of support required so that the pupil becomes more independent. In addition, intervention programmes often occur in a group setting, so opportunities should be available for pupils to benefit from this social context.

Scaffolding has three key aspects (Van de Pol et al., 2010):

1) Contingency: the chaining together of interactional turns, so that the pupil's progress is constantly monitored and carefully calibrated responses are given by the adult to address difficulties and move the pupil forward.

2) Fading: 'providing the child with the minimal help needed to ensure joint success' (Wood & Wood, 1996, p.7). In this way the pupil develops independence in performing the task (and similar tasks) thereby reducing reliance on the expert support offered by the adult.

3) Hand over: The adult's responses act to hand over responsibility to the learner over a period of time (Wood, Bruner, & Ross, 1976).

These three areas are closely connected, with contingent teaching arguably the key aspect as it 'appears to lead to fading that can lead, in turn, to transfer of responsibility' (Van de Pol et al., 2010, p. 287). The act of scaffolding has to be done in the moment and therefore relies purely on the quality of the adult/pupil interaction. TAs therefore require pedagogical skill in making moment by moment decisions based on the response of an individual or group to the task in hand.

The main interactional structure found in classrooms is the IRF (Initiation-Response-Feedback) (Sinclair & Coulthard, 1975). The 'initiation' is generally a question, usually with a known answer. The 'response' is the pupil's best guess at the answer. The third move evaluates the pupil's response against that expected. This structure is being extensively reinterpreted by conversation analysis (Macbeth, 2004; Radford, Ireson, & Mahon, 2006). This reinterpretation has highlighted that both the initiation and feedback moves need to be designed in very specific ways for youngsters with SEND in order to ensure contingency, and therefore scaffold learning. This paper offers a fresh interpretation of TA/pupil discourse in literacy intervention sessions in light of this. Specifically, it will consider repair and topic management.

First, repair is needed more often, and repair sequences may need to be extended, owing to extensive errors and differences in responses by pupils with SEND (Radford, Ireson, & Mahon, 2012). Repair occurs when there is a problem in the interaction (i.e. when a pupil fails to provide a relevant next turn). It is defined as the practices used to deal with problems in speaking, hearing or understanding the talk in conversation (Schegloff, 2000). Effective scaffolding requires careful formulation of the feedback move. It may take several turns for the TA to draw out exactly what resources the pupil is drawing on in attempting to repair the trouble and provide appropriately matched support (Wood et al., 1976). Feedback moves by the adult need to build contingently on the response (provide a repair initiator) in order to prompt self-repair (Macbeth, 2004). Correction in the feedback position is the least preferred move as it does not require the pupil to draw on their own resources or attempt self-repair (Radford, 2010). It therefore would not meet the fading or hand over aspects of scaffolding. If correction has to be used, the next pupil turn is crucial in monitoring their engagement with the corrected form (to demonstrate take up). This shows that the pupil has oriented to the learning point and hand over is occurring. Therefore, features of TA talk which might be expected to aid learning would include extended sequences of step by step responses which are closely matched to the current level of understanding displayed by the pupil and which move the pupil further towards self-correcting; and the avoidance of immediate correction.

How topics are taken up and continued during the ongoing interaction is also a key area for the TA. The IRF feedback move does not necessarily extend or develop the topic unless modified to do so (Cazden, 2001; Mroz, Smith, & Hardman, 2000). Modifications involve balanced adult/pupil control during initiation and feedback moves, to encourage topic extension and development by the pupil. Open topic invitations allow pupils to display their current knowledge and understanding through eliciting their ideas and opinions. Consistent with scaffolding theory, these sequences operate as 'zones of negotiation' when the interaction is pitched beyond the learner's current developmental level and the adult is responding to the learner's agenda in a contingent way (Radford et al., 2006).

Effective scaffolding depends on how well participants are able to co-construct knowledge through the interaction (how skilled they are in chaining together utterances and orienting to the learning goal for that part of the task). Therefore, TA talk which might be expected to support learning would include the encouragement of pupils to explain, defend and elaborate on their responses (Brown & Palincsar, 1989).

Recent work that analysed the talk between TAs and teaching groups during classroom maths sessions has shown that the traditional IRF pattern was used extensively by TAs (Radford, Blatchford, & Webster, 2011; Rubie-Davies, Blatchford, Webster, Koutsoubou, & Bassett, 2010). TAs focused on task completion, whereas teachers focused on learning, and TAs were reactive whereas teachers were proactive. Specifically, it was found that TAs gave answers whereas teachers prompted self-checking and deeper thinking; and feedback from TAs focused on task completion, whereas teachers gave clearer explanations and spent more time on this. Furthermore, the feedback move by TAs often supplied the answer or provided very high level support (Radford et al., 2011). Teacher talk might therefore be argued to be more closely aligned with scaffolding than TA talk.

However, coding teacher/TA talk is problematic in relation to scaffolding, as both the talk of the adult and the pupil is essential in determining whether scaffolding is occurring. In addition, scaffolding is a dynamic process, where turns over a period of time may need to be considered (Van de Pol et al., 2010). This qualitative research therefore extends and builds on previous research by carrying out close analysis of the interactions between TAs and pupils during literacy intervention sessions. Specifically, it looks at the details of interactions over a number of turns to see if the learner is actively participating (a necessity for scaffolding to occur). It identifies interactive strategies used by TAs that have helpful or unhelpful implications for learning by considering whether they work as contingent in the ongoing interaction, and indicate fading and handover of responsibility. This allows conclusions to be drawn as to the extent that the interactions between

TAs and pupils may be considered scaffolding. We then set out the specific areas for professional development which have implications for ways in which EPs can support schools.

The research questions were:

What repair practices are used by teaching assistants and pupils when troubles arise?

What practices are used by teaching assistants and pupils for the management of topic?

Method

The aim of this project was to explore the interactions between TAs and small groups of pupils during literacy intervention sessions. It used naturalistic observation involving the collection of video material as the primary data and supplementary information in the form of interviews and documents.

A total of 22 video recordings were made of eight teaching groups, involving four TAs from two English primary schools and one infant school. The schools were all larger than average, with two schools having significant numbers of pupils learning English as an Additional Language. The teaching groups were an opportunistic sample. All sessions recorded naturally occurring interactions during literacy sessions which were based on structured or scripted materials (DfES produced Early Literacy Support and Additional Literacy support programmes, and an intervention produced by a local authority). These catch up programmes focused on phonics, spelling, and guided and supported reading and writing, and were led by the TA. All of the programmes were well established in the schools; TAs had received between one and two days of training in relation to the materials, provided by the local authority when the programmes had been introduced. The sessions recorded were the normal sessions timetabled to be run by the TAs on the days when recording had been organised. Interventions of this type are common in primary schools and so these recordings are representative of normal teaching and learning activity. The researchers were not present during

the recording, although the video camera was in clear sight of the participants. There was initial acknowledgment of the camera by some pupils but, subsequently, behaviours appeared not to be influenced by the presence of the camera (Jordan & Henderson, 1995). The British Educational Research Association ethical guidelines were followed, paying special attention to issues of confidentiality, anonymity and data storage (British Educational Research Association, 2011). Written consent for the collection, analysis, and public use of data for illustrative purposes was obtained from the headteacher, TAs and parents.

Full details of the context of each recording, and participants involved is set out in Table 1. Pupils involved in the sessions had been identified as being between 3 months and 1 year behind their peers in literacy skills, based on teacher assessment. Teachers had also completed a screening activity, provided with the programme materials, to identify pupils to be included in the groups.

Table 1: Case background information

Transcription and analytic process

All the recorded sessions were transcribed in full. Using Conversation Analysis (CA) as an analytic framework, a theory building approach was taken (Ten Have, 2007).

There are two types of CA, pure and applied. Applied CA studies the way in which interactions demonstrate orientation to specific situations and requirements (Ten Have, 2007). This approach focuses on identifying 'telling instances' which are not claimed to be generalizable, but which show how participants are orienting in interesting ways to the process in hand. This study therefore extends more generalised findings from previous research into TA/pupil interactions (Rubie-Davies et al., 2010). It looks at the dynamic nature of the interaction across several turns to consider whether contingent teaching is occurring, and whether the interactions contain evidence of fading and transfer of responsibility.

Unmotivated looking was employed to find a sequence of interest (showing repair or co-construction of topic). When transcribed this episode was then used as a basis for finding similar instances across the data set. Once a collection was built, one episode which was considered 'typical' was analysed in more detail, involving repeated viewing, and the adding of all available linguistic and paralinguistic features and gestures. Particular attention was paid to identifying the action being performed in each turn, as shown by the next-turn proof procedure (Ten Have, 2007).

Where episodes were identified as different, these were used to build new collections. The first analysis was carried out by the first author, with the second author checking the analysis to guard against the imposition of predetermined theories and assumptions (Hutchby & Wooffitt, 1998). As each sequence of repair or topic generation/extension is unique it is not possible to provide statistics in any meaningful way. The purpose is to generate theory rather than claim that all TAs make similar interactional moves.

Once these collections were in place, comparisons were made between the repair and topic strategies being exhibited and those which have been previously established by research as potentially helpful in relation to scaffolding. For repair this was consideration of whether TA responses to difficulties led the pupil to self-repair, and whether the group context supported repair. For topic, whether topics were co-constructed and sustained through active pupil participation was considered. This allowed conclusions to be drawn regarding the extent to which the interactions studied were likely to provide a quality learning experience.

Results

Examples from the collections studied are explored and data extracts are provided to illustrate some key points for consideration. In some cases quantification has been provided to clarify that this was not a single instance. However, in line with CA practice, the intention was to explore and clarify key aspects of TAs' use of interactional strategies.

Repair sequences are not extended

On a positive note, the data showed that scaffolding is evident during TA/pupil interaction, where the pupil is provided with an opportunity to self-repair before a higher level of support or a correction is given. However, turns which offer a lot of support to the pupil were in evidence, such as telling the pupil the strategy to use (e.g. 'sound the word out', used 35 times in the data set, or 'look at the picture', used 5 times) or a substantial clue which requires little independent effort on the part of the pupil. Short repair sequences were found, where either a correction is immediately provided (193 examples) or only one repair move, such as a prompt, is used before correction (31 examples). In the following example the TA provides a repair initiator then, when the self-repair fails, the correct answer is given.

The pupils are taking turns to read sentences that they have composed. The sentence being read by Sam is 'When I came to school today I forgot my book at home' (sic). The TA is running her pencil along the top of the words as they are read aloud.

Extract 1

1 Sam came to school today I forget

2 TA2 for?

3 *(moves pencil back along the beginning of the word)*

4 Sam f forget?

5 *(looks at TA)*

6 TA2 for↓got

7 Sam forgot

↓ downward intonation

The trouble source is the second syllable of the word 'forgot' which is read by Sam as 'forget' (line 1). A repair initiator is provided by the TA in line 2; this combines two prompts which take the form of the verbal repetition of the first syllable together with the gesture of running her pencil back to the beginning of the word. Both her verbal turn and the gesture acknowledge the correct syllable (repeat of 'for') and expose the source of the trouble (the second syllable). Sam fails to self-repair because he repeats the word 'forget'; the look towards the TA in line 5 when reading the second syllable, together with the raising intonation at the end of the word suggest that he is aware that this continues to be a trouble and invites the participation of the TA in the repair. At this point the TA says 'forgot' (line 6), stressing the /o/ and using falling intonation which indicates a correction. This correct alternative is taken up by Sam (line 7) and the task of reading the sentence continues. To summarise, a repair initiator is provided by the TA but when the pupil fails to self-repair a correction is very promptly provided.

Repair is provided through the use of non-verbal clueing or gesture

There were 23 examples in the dataset of TAs pointing or clueing through gaze to indicate a specific word in the text. Directional language and verbal clues and hints may be used alongside the gesture. The data show that pupils rely on these gestures rather than drawing on their own resources. The following extract is an example.

Extract 2

- 1 TA3 be careful what you cross out I [want you to sound out the letters read the
- 2 Lea [(looks down at paper)
- 3 words [see if its got that o sound o sound
- 4 Lea [(looks at TA).....

- 5 TA3 I can see it and I'm looking at it o: sound
- 6 Lea(eyes follow TA's gaze to paper, turns head towards the paper,
- 7 then puts pencil point on a word and looks at TA)

_ emphasis : stretched sound

Lea looks at the TA in line 4 which the TA treats as indicating that support is required in finding the answer, thus offering two clues in response. Lea looks at the TA during her verbal hint ('o: sound'). The second clue 'I'm looking at it' is more specific. Lea follows the direction of the TA's gaze, turning her head towards the paper, and puts her pencil on a word, looking at the TA for feedback.

Take up of correction is not monitored

Analysis showed examples of the TA moving the topic on before the take up turn by the pupil (which would allow them to demonstrate they have oriented to the correction) is completed, or sometimes started. In some cases there is no take up turn. In others a take up turn is attempted but overlapped or interrupted by the TA. Overlapping take up turns occur 15 times in the data set.

In extract 3 the pupil begins a repetition of the TA's correction, but this is overlapped by the TA when she moves the task on. The group are taking it in turns to put together graphemes in different combinations to form words. The word which has been made is *rather*.

Extract 3

- 1 TA3 what about the other end?
- 2 Joe um (0.9 second pause) rather (*looks at TA*)
- 3 TA3 rarther
- 4 Joe rather?
- 5 (*nodding*)

6 TA3 yeah?
7 Joe and r[a ther
8 TA3 [and take er the er sound where would we put the t h?

[overlapping speech

In line 2 the 'a' is pronounced as the short phoneme /a/, as in 'cat', instead of /ar/. Joe's attempt at the word begins with 'um' and a 0.9 second pause, and is followed by looking directly at the TA, suggesting that clarification is being invited. The correct alternative is provided by the TA in line 3. In line 4 the alternative is checked by Joe ('rather?') who takes the 'yeah?' in line 6 as a prompt to repeat. However, this is overlapped by the TA (line 8) after the initial phoneme is pronounced (/r/). The use of 'and' in line 8 indicates that the task should move on, clarified by an instruction to put the graphemes in a new order ('take er the er sound where would we put the t h?'). Importantly the repeat by Joe in line 7 displays that he has failed to orient to the correct alternative (the /ar/ is still pronounced as a short /a/). However, the task has moved on and the trouble source remains unrepaired. The continued mispronunciation by Joe is likely to signify a lack of semantic understanding. A significant learning opportunity has been missed.

Previous repair sequences are not taken up

Given that TAs typically work with small groups during literacy sessions, the data shows that pupils do not consistently orient to repair sequences involving other pupils. As a result, each trouble source has to be resolved with each pupil separately.

In extract 4 the group is taking it in turns to read a word and then split it into the component elements (core word and prefix or suffix). The word being read is *hostess*. This word has previously been read incorrectly by another pupil (shown for context in lines 1-5) and a repair sequence completed which follows the same sequence as in extract 1 (a repair initiator is provided by the TA in

line 3 followed by a correction in line 5). The extract under discussion (lines 6 to 10) occurs 171 seconds later, during the same task.

Extract 4

25:17 1 TA3 Ryaaan
2 Ryan hostees (*looks at TA*)
3 TA3 hoste?
4 Ryan hostees (*looks at TA*)
5 TA3 hostess

(171 seconds of continued interaction)

28:15 6 TA3 right what one are you on Simon?
7 Simon hostee
8 TA3 hostess
9 Simon hostess
10 TA3 yeah?

Lines 2-5 comprise a repair sequence during which the TA provides a correction specifically of the phoneme which was incorrect (/e/) and prompts Ryan to complete the word. When he fails to take up the repair a correction is provided. 171 seconds later Simon has a problem with the same word (line 7) because he reads it with a short o sound and a long /e/ sound. In the next turn, rather than providing a repair initiator, the TA provides a correction of the whole word (line 8). The fact that a problem with the same word occurs, suggests that Simon has failed to orient to the previous correction. Secondly, Simon is not prompted by the TA to self-repair. There were 8 examples across

the data set: where a word has previously been repaired, correction is the first response by the TA when a trouble with the same word occurs with another pupil.

Opportunities for jointly constructed topic are closed down

When TAs use open topic initiations (often provided by a lesson script), pupils are initially encouraged to provide a number of answers. However, the data show that a predetermined product is produced (in terms of both content and linguistic structure). Specific answers are selected by the TA, or inserted into the interaction. Whilst topic initiating questions are treated as genuine by the pupils, the TA pursues topic in a highly structured way towards a known answer. Pupils' responses are shaped to the extent that there are limited contributions by them.

The following extract shows an open topic invitation, which is then pursued in a way that demonstrates that the TA is working towards a specific response in terms of both content and form.

The group is writing a short story about forgetting something. They have written a sentence that says either 'I forgot my bookbag' or 'I forgot my lunchbox' (each pupil has chosen which noun to insert).

Extract 5

- 1 TA1 so imagine if you had come to school today and you'd forgotten to bring
2 your book bag what do you think would happen [(.) how would
3 [you [get it Carol
4 Carol [(hand up)
5 Colin [my [(hand up)
6 Carol you you you if you forgot and the bus went somewhere else you you will be very
7 sad and if you are having school dinners you will be very sad because you haven't

8 got no money

9 TA1 you haven't got any lunch have you if you've lost your lunch box but what would

10 happen is the school would give you a dinner so you wouldn't lose out but if you

11 just left your book bag at home (.) then what do you think would happen

12 Colin (*hand up*)

13 TA1 yes Colin

14 Colin um your mum would take it to the office

15 TA1 that's right that was what I was thinking so that would be a good sentence to write

16 today wouldn't it what could we say my mum

17 Rob took

18 TA1 gave my

19 Russ book bag to the office

20 TA1 to the office or if it is you[r lunchbox yes I'm going to leave a space for you when we

21 Russ [lunchbox

22 do our sentence

(.) short pause (less than 0.1 of a second)

Carol treats the question 'what do you think would happen' as an open topic invitation. Her response is taken up and discussed by the TA. However, whilst the response could be used to form a written sentence, thus displaying an acceptance of Carol's ideas (which would be typical of a feedback response to an open topic invitation), it is not taken up in this way. Instead the TA rephrases the question adding 'but if you just left your book bag at home' (line 11). It is evident

from the subsequent interaction that the effect is to restrict the possible answers. Colin's answer 'your mum would take it to the office' (line 14) is responded to with: 'that's right that's what I was thinking', demonstrating that a 'correct' answer was being sought. This answer is then taken forward to the written task: 'so that would be a good sentence to write today wouldn't it'. Although there is another opportunity for the pupils to shape the sentence to be produced in line 16, topical pursuit is highly directed by the TA. She provides the beginning of the sentence 'my mum', and changes 'took' (Rob – line 17) to 'gave my'. The only variation taken up is 'lunchbox' (line 20), in line with the previous sentences written by the pupils. Therefore, what appears to be an opportunity, through use of open topic invitations, for pupils to contribute original ideas is, in fact, highly directed and constrained by the TA.

Discussion

In relation to repair, the data shows repair sequences that are not extended, so the feedback move by the TA is not working in a contingent way or demonstrating fading. Instead, after one repair initiator the TA moves on to correction. A more valuable strategy would be to provide a series of repair initiators, each building on the previous response from the pupil to move them towards self-repair. This allows for the drawing out of the pupil's resources and the provision of increasing levels of support as required. The use of gesture should be considered carefully as to its contingency, as it potentially provides high levels of support or correction in the same way as a verbal interactional move. The data also show that take up of correction is not always monitored, and that repeated errors across the group are not responded to as an opportunity to pool resources towards repairing the trouble. Where correction is the only option it needs to be followed up so that it is clear that the pupil has taken up the learning point. Pupils should be encouraged to provide repair initiators for each other, and to follow repair sequences between the TA and other pupils. This would support the development of reciprocal scaffolding skills (the skills of collaboratively working through a problem and drawing on peers as a source of support) (Brown & Palincsar, 1989; Holton & Clarke, 2006).

Whereas working with a small group of pupils has the potential to allow for more opportunities for pursuing and extending topic between TA and pupils and between pupils themselves, these opportunities are routinely closed down and pupil turns are restricted to less complex contributions. This limits the development of higher order thinking and interaction skills, and allows fewer opportunities for the TA to draw out the knowledge and understanding of a pupil in relation to a topic. Where the topic initiation is open, it would be more appropriate for it to be followed by feedback moves which work with the pupils' genuine responses, important for providing contingent teaching and opportunities for pupils to improve their dialogue skills (Palincsar & Brown, 1984).

When taken together, these TAs' interactional strategies demonstrate a focus on task completion rather than developing the pupil's learning experience, which supports the findings of previous research (Radford et al., 2011; Rubie-Davies et al., 2010). In these cases, TAs retain a higher level of responsibility; pupils are not involved in repair or in topic construction to the extent that the interactions might be considered skilled scaffolding. Correction is commonly used and pupils are heavily supported through both verbal and non-verbal interactional strategies. This demonstrates a lack of contingency. The 'fading' (Wood & Wood, 1996) of the responsibility for task completion is generally lacking. The strategies discussed risk encouraging dependence of pupils on adult support rather than developing their self-repair and co-construction of topic skills, which are essential for accessing everyday classroom tasks.

It has been persuasively argued that there needs to be a fundamental rethink of policy in relation to whether or not TAs should have any pedagogical role, and that this needs to come before any changes to training and management (Giangreco et al., 2013; Webster et al., 2010). This suggests caution against the use of TAs as the default provision for pupils with SEND. A strong case has been made by research that TAs who have a classroom support role need to understand scaffolding as a concept (Radford, Bosanquet, Blatchford, & Webster, 2015; Radford, Bosanquet, Webster, Blatchford, & Rubie-Davies, 2014), which this research supports. This might be provided at a school,

school cluster or local authority level to TAs and those who manage their work. This type of training and professional development could be valuably provided by EPs when working with a school around the needs of a specific pupil, or when supporting schools to develop their systems for SEND provision. Training is also needed in preservice teacher education and beginning teacher induction in effective interactional techniques, and ongoing continuous professional development support to help teachers effectively deploy and monitor the work of TAs.

Although there is evidence that TA led literacy interventions can have a positive impact on pupil outcomes (Sharples, Webster, & Blatchford, 2015), this research raises questions as to whether this impact could be higher if consideration is given to training TAs in working contingently when pupils are struggling; in fading support; and in using the social support of the group to enhance the learning experience. Our recommendations for training, based on evidence from this study, are that it needs to include three key areas. Correction should be used sparingly because of its implications for closing down talk and limiting pupils' participation (Radford et al., 2011). Correction might be appropriate when phonemes are incorrectly sounded (in which case the correction should operate as a model, with the opportunity for the pupil to repeat the phoneme) or when attempting to read a proper noun which cannot be easily decoded. However, in general a strategy where the onus is on the pupil to draw on their own resources is likely to lead to a better quality learning experience. Scaffolding means that this can be done in a way which involves increasingly adult led strategies until the pupil is able to self-repair. An initial prompt such as 'have a think' can be followed by a clue and then by a model if necessary, thereby developing an extended dialogue which provides the least amount of support necessary (Bosanquet, Radford, & Webster, 2016). In this way the pupil is helped to develop self-scaffolding strategies. Least assistance first should be encouraged as a basic principle in interactions to promote independence (Wood & Wood, 1996).

A second recommendation is to consider the role of non-verbal cueing and gesture. Some practices, such as looking directly at the answer which the pupil is searching for, are best avoided as they are,

in effect, correction. Other practices, such as the use of iconic gesture, may be used effectively as part of the scaffolding process in order to give a clue when required.

Finally, how topic can be jointly constructed between the TA and the learner needs to be considered at the point of task planning. During writing tasks, the key question is whether there needs to be an end product which has a fixed format and content. Where there is such a need then a pre-prepared model might be considered rather than trying to construct the piece with the pupils (i.e. a piece of completed writing shown to the group). This model can then be unpacked, together with an explanation of why a model is being used. This is likely to make better use of time than extended interactions which change and shape pupils' contributions to a pre-determined format. Where a fixed format is required this could be modelled, but the specific content left open to each pupil to allow genuine contributions.

Conclusion

This research adds to the growing body of evidence which demonstrates that there needs to be a fundamental change in the ways in which TAs are deployed and supported in a pedagogical role (Blatchford et al., 2012; Giangreco et al., 2013; Radford et al., 2011; Radford et al., 2015). TAs with little or no training are working with pupils with complex needs (academic, behavioural and emotional), but the long term goal of each pupil working with no (or minimal) adult support must be paramount. It is only if this is seen as the overriding aim that the importance of scaffolded interaction becomes apparent. When this is clear, then the need for TAs to be trained in interactional strategies which support this becomes paramount. Research is under way to examine the changes to the interactional practices of TAs in response to such a training programme. Future research is also needed with respect to how EPs could support Special Educational Needs Co-ordinators and other school staff in the implementation of such training.

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Table 1: Recorded sessions background information

Group	School	TA	Details of group	Activity type	Session length (mins: secs)
1	A	TA1	Year 1 (5-6 years old) 5 pupils (3 boys, 2 girls)	Local Authority materials	Session 1 (40:22)
2	A	TA1	Year 1 (5-6 years old) 6 pupils (3 boys, 3 girls)	Local Authority materials	Session 1 (35:34) Session 2 (26:36)
3	A	TA2	Year 1 (5-6 years old) 3 pupils (1 boy, 2 girls)	Local Authority materials	Session 1 (37:58)
4	A	TA2	Year 1 (5-6 years old) 6 pupils in session 1 (5 boys, 1 girl) 5 pupils in session 2 (1 boy absent)	Local Authority materials	Session 1 (23:12) Session 2 (29:17)
5	B	TA3	Year 3 (7-8 years old) 6 pupils (5 boys and 1 girl) 5 pupils in session 2 and 4 (1 boy absent)	Additional Literacy Support	Session 1 (46:32) Session 2 (54:09) Session 3 (47:15) Session 4 (43:45) Session 5 (28:23)
6	B	TA3	Year 3 (7-8 years old) 6 pupils (3 boys and 3 girls)	Additional Literacy Support	Session 1 (48:52) Session 2 (51:30) Session 3 (44:11) Session 4 (28:53)
7	C	TA4	Year 1 (5-6 years old) 6 pupils (3 boys and 3 girls)	Early Literacy Support	Session 1 (32:21) Session 2 (38:32) Session 3 (31:27) Session 4 (28:55)
8	C	TA4	Year 1 (5-6 years old) 4 pupils (3 boys and 1 girl)	Early Literacy Support	Session 1 (27:46) Session 2 (33:40) Session 3 (21:08)