

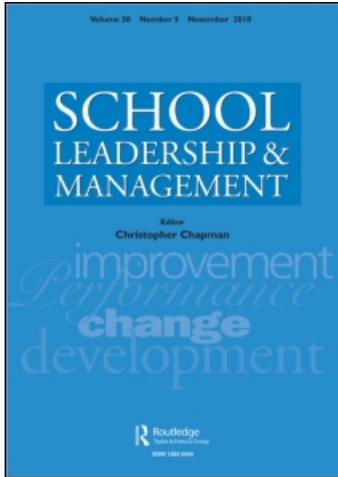
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The wider pedagogical role of teaching assistants

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Teaching assistants (TAs) comprise a quarter of the school workforce in England and Wales. There has been controversy over TAs' deployment and appropriate role regarding supporting learning and these debates have been transformed by findings from the largest study of school support staff (the DISS project), which show that TA support has a negative impact on pupils' academic progress. This article conceptualises the most likely explanations for the negative effects of TA support in the form of the wider pedagogical role model, the components of which enable us to understand the effects of TA support in terms of the decisions made about TAs, rather than by them.

Keywords: teaching assistants; inclusion; deployment; impact

Introduction

Teaching assistants¹ (TAs) are part of a growing international trend toward paraprofessionals working in different professional areas (e.g., health and law). There is ambiguity about the role of TAs in supporting learning, and recent findings from the largest study of TAs (the Deployment and Impact of Support Staff [DISS] project), presented in this article, question the current and widespread models of TA deployment. The rationale behind increasing the number of TAs in classrooms over the last decade seems fairly sound: TAs improve adult-to-pupil ratios. Yet findings from the DISS study presented here, show that TA deployment, together with other situational factors connected with their employment and preparation, can have a negative impact on the academic progress of pupils in mainstream schools.

In this article, we use these situational factors to provide the basis for an organisational framework that structures and describes key facets of TAs' work. We put forward a 'wider pedagogical role' (WPR) model to enable us to interpret the results on TAs' impact on pupils' academic progress within the wider context of the factors within which TAs work, and which, we argue, maximise or inhibit their effectiveness. In the discussion at the end we will consider how the WPR model can be used to reconceptualise the work and role of TAs, and inform models of educational effectiveness.

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Background to the DISS project

The rise in support staff

In 2010, 43% of the mainstream school workforce² in England comprised support staff, and over half of these people were TAs (DfE 2010). In mainstream settings in England, TAs account for 32% of the nursery and primary school workforce, and 12% of the secondary school workforce.³ Factoring in special schools and pupil referral units, TAs comprise about a quarter (24%) of the total school workforce in local authority maintained schools in England.⁴ The most up-to-date and comparable figures for Wales show that TAs make up almost a third (32%) of the school workforce⁵ in the maintained sector, and account for 74% of all support staff (Statistics for Wales 2009).

The number of TAs in mainstream schools in England has more than trebled since 1997 to about 170,000 people (DfE 2010). Several developments over the mid-to-late 1990s have driven not only this growth, but the expansion of the roles and responsibilities many of these TAs now have. These developments include greater numbers of pupils with special educational needs (SEN) in mainstream schools and the introduction of literacy and numeracy strategies. TAs have become central to both the inclusion agenda and the drive to boost the attainment of those who are not making the expected levels of progress in English and mathematics. From 2003, the number of TAs increased further following the implementation of *The National Agreement*, which was a policy response to problems with teacher recruitment and retention. The Agreement had the twin aims of raising pupil standards and tackling excessive teacher workload via new and expanded support roles (DfES 2003).

The general effect of these initiatives has led to TAs occupying a role in mainstream schools where they support pupils – principally, but not exclusively, those with learning and behavioural needs – by supplementing teacher input in class and providing more opportunities for one-to-one and small group work both in and out of the classroom.

Previous research on TAs

Most of the existing research on TAs suggests a generally positive view about their function in schools; however, there are significant gaps in knowledge regarding their preparation and training, their deployment and their interactions with pupils. In addition, both in the UK and internationally, there is ambiguity about the TA role in relation to teachers and teaching, and the inclusion of pupils with SEN (in the UK, see: Bach, Kessler, and Heron 2004; Beeson, Kerry, and Kerry 2003; Cremin, Thomas, and Vincett 2005; Farrell, Balshaw, and Polat 1999; Mistry, Burton, and Brundrett 2004; Moran and Abbott 2002; and Schlapp, Davidson, and Wilson 2003. For debates in Cyprus, Finland and the US respectively, see: Angelides, Constantinou, and Leigh 2009; Takala 2007; Finn et al. 2000; Giangreco 2009).

In England and Wales, the sustained and significant increase in TA numbers has proceeded largely on the ungrounded assumption that they help to raise standards for *all* pupils (not just those with SEN). Whilst there is evidence that TAs have a positive impact on teacher workload, there has been little systematic research on their impact on pupil outcomes. Such evidence as exists tends to be derived from small scale

intervention studies, involving specific subjects and/or year groups (see Alborz et al. 2009). There is even less research over sustained periods (e.g., a school year) and under everyday classroom conditions.

The DISS study⁶ was designed to help fill gaps in knowledge regarding TA deployment and the school and classroom processes through which their impact is maximised or inhibited. There were two broad aims of the DISS project: (1) to provide an accurate, systematic and representative description of the types of support staff and their characteristics and deployment in schools, and how these changed over time; and (2) to analyse the impact of support staff on teachers, teaching and pupil learning, behaviour and academic progress. The study focused on all types of support staff and all pupils. Research was conducted on a large scale, over a pivotal five-year period (2003–2008) during which TA numbers continued to increase and the roles of support staff expanded into new areas, some of which were previously the reserve of teachers. The project was funded by the English and Welsh Governments. More information about the DISS project and full findings from the study can be found in Blatchford et al. (2008, 2009a, 2009b).

DISS methodology: a distinctive research design

The DISS project was longitudinal and conducted on a much larger scale than previously attempted in the UK. It was naturalistic in design (e.g., it did not involve a targeted intervention) and captured everyday circumstances in schools and classrooms. Strand 1 comprised three waves of questionnaire surveys of schools, teachers and support staff, generating data on support staffs' characteristics and employment. Strand 2 used a multi-method approach, integrating quantitative and qualitative analyses. It included a detailed longitudinal study of the effect of the amount of TA support received by pupils on their academic progress and approaches to learning (the Main Pupil Support Survey, or MPSS), as well as systematic observation studies of deployment and practice. The components of the DISS project data collection strands are presented below (Table 1), together with response rates.

Findings on the impact of TA support on pupils' learning and behaviour

Results from systematic observations confirmed the view of teachers, captured in the teacher questionnaire, that TAs had a positive effect in mainstream classrooms in terms of reducing off-task behaviour and disruption, and allowing more time for the teacher to teach.

However, results on the effect of TA support on the academic progress of pupils in mainstream schools, as revealed through the MPSS, were at variance with these positive views and results. Each of the two MPSS waves tracked a separate cohort of pupils in seven age groups over one year. The aim was to address the effects of TA support on pupils' positive approaches to learning (explained below) and their academic progress⁷ over a school year. The analyses used multi-level regression and controlled for factors known to affect progress, such as pupils' SEN status,⁸ prior attainment, eligibility for free school meals, English as an additional language, deprivation, gender and ethnicity.

Table 1. DISS data collection methods and responses.

<i>Strand 1</i>	
Surveys	Three biennial large scale, national questionnaires sent to mainstream and special schools Responses from 6079 schools, 4091 teachers and 7667 support staff, including 1864 (24%) TAs
<i>Strand 2</i>	
Timelogs	Support staff recorded which of 91 tasks they did every 20 minutes for one working day in the academic year 2005/06 Respondents recorded duration of each task per 20 minute slot 91 tasks were grouped into six categories for analysis 1670 responses from individual support staff, including 310 (19%) from TAs
Structured observations	27 TAs across 18 schools (nine primary; nine secondary) were shadowed for one day each Predominant activities of teachers and TAs recorded every five minutes, with the context and the task TA-supported pupils carried out 1500+ observations of teachers, TAs and pupils took place in 140 lessons, both in and away from the classroom
Systematic observations	686 pupils in Years 1, 3, 7 and 10 were observed for two days, across 49 schools (27 primary; 22 secondary) Observations of TA-to-pupil interactions made in English, mathematics and science lessons 34,400+ observations made in 10-second intervals
Case studies	Observations carried out in 65 mainstream and special schools (30 primary; 21 secondary; 14 special) 591 interviews conducted with: 65 school leaders; 105 teachers; 233 support staff (including 114 TAs); and 188 pupils (mainstream only)
Adult-to-pupil interaction	42 simultaneous digital voice recordings made of teacher-to-pupil and TA-to-pupil talk in lessons 32 lesson-length transcripts used for analysis (16 teacher-to-pupil; 16 TA-to-pupil) Sample for analysis restricted to recordings made in English and maths lessons Utterances: 5226 teacher; 2295 TA
Main pupil support survey (MPSS)	Survey of effects of TA support over a school year on pupils' Positive Approaches to Learning (PAL) (e.g., motivation, confidence) and academic progress 8200 pupils across 153 schools: 2528 pupils and 76 schools in Wave 1; 5672 pupils and 77 schools in Wave 2 Seven year groups covered: Years 1, 3, 7 and 10 (in Wave 1) and Years 2, 6 and 9 (in Wave 2) PAL outcomes: teacher ratings of whether pupils' PAL had improved, remained unchanged or decreased Academic progress outcomes: attainment at start and end of school year, based on Key Stage assessments, National Curriculum levels and teacher assessments PAL and academic progress predictors: teacher estimates of amount of time TA support received

Effects of TA support on pupils' positive approaches to learning

The first analysis assessed the amount of TA support in relation to the 'softer' types of pupil functioning in school that were called positive approaches to learning (PAL). An amended version of the Pupil Behaviour Rating Scale developed in the Class Size and Pupil Adult Ratio project (Blatchford, Edmonds, and Martin 2003) was used. For the purposes of the DISS project, the instrument was adapted to produce one item and scale for each dimension. The eight dimensions were representative of those previously developed, and had proven reliability. They were:

- Distractibility.
- Task confidence.
- Motivation.
- Disruptiveness.
- Independence.
- Relationships with other pupils.
- Completion of assigned work.
- Follows instructions from adults.

Teachers were asked near the end of the school year to describe change over the year on each of the dimensions in terms of a three-point scale:

- (1) Pupil had improved over the year.
- (2) Pupil had stayed the same.
- (3) Pupil had deteriorated over the year.

The results showed little evidence that the amount of support pupils received from TAs over a school year improved their positive approaches to learning, except for those in Year 9 (13- to 14-year-olds), where there was a clear positive effect of TA support across all eight PAL outcomes. At that age, pupils with the most TA support had noticeably more positive approaches to learning.

Effects of TA support on pupils' academic progress

The second set of analyses assessed the effects of TA support on pupils' academic progress in English, mathematics and science, over the course of a school year. Again, there were two cohorts and seven year groups overall. The results were particularly striking (Table 2): 16 of the 21 results were in a negative direction; there were no positive effects of TA support for any subject or for any year group. In summary, those pupils receiving the most support from TAs made less progress than similar pupils who received little or no support from TAs, even after controlling for factors likely to be related to more TA support (e.g., prior attainment and SEN status).

An alternative way of conceptualising the negative effects of TA support on pupil progress is to translate the regression results into National Curriculum sub-levels⁹ (for more on this, see Blatchford et al. 2009b). In general, pupils are expected to progress by three National Curriculum sub-levels every two years. Using this conversion, pupils who received the most TA support were behind their peers by up

Table 2. Effect of TA support on pupils' academic progress.

Wave	Year	English	Mathematics	Science
1	1	√n	√n	×
	3	√n	√n	×
	7	√n	√n	×
	10	√n	×	×
2	2	√n	√n	√n
	6	√n	√n	√n
	9	√n	√n	√n

Notes. × = No significant effect of TA support; √n = Significant negative effect of TA support.

to two sub-levels, as a result of TA support. The specific implications that TA support has for pupils with SEN (typically those receiving the most TA support) are discussed in Webster et al. (2010).

Accounting for the negative relationship between TA support and pupil progress

In order to explain the negative relationship between TA support and pupil progress, we might reasonably assume that pupils who were given most TA support would, in any case, have been likely to make less progress. However, such explanations, in terms of pre-existing characteristics of pupils, are unlikely because key pupil characteristics that typically affect progress (and TA support), such as SEN status, prior attainment and measures of deprivation, were controlled for in the statistical analyses. To be of any consequence, any potential factor would need to be systemic across all year groups and subjects, and related to both attainment and TA support.

Another possible explanation for the negative relationship is that it may be due to the different levels of TAs' qualifications relative to teachers. Generally, TAs have lower level qualifications than those of teachers: the majority of TAs' (59%) highest qualification was at or below GCSE level (the school-leaving age qualification). Unlike teaching – which is a graduate profession – there is no minimum entry-level qualification required for working as a TA. It was not possible to examine this potential explanation directly in the DISS study. We note, however, that in a major study on class size effects, background characteristics, including qualifications, were not found to have an impact on pupil progress (Blatchford et al. 2004).

So, if pupil factors and TA qualifications do not appear to be explaining the negative relationship between TA support and pupil progress, what is? We argue that it is likely that the organisational factors governing TAs' employment and deployment offer the most fruitful answer to this question. In the next section of this article we present, in turn, findings from the DISS project on the wider pedagogical role of TAs in terms of the three main components of the WPR model: preparedness; deployment; and practice. As we work through each component, we narrow the focus from the school-level, through the classroom-level, getting closer to the pupil-level experience of TA support. In this way, we seek to explain the negative effect of TA support on pupil progress.

Findings from the DISS project on the wider pedagogical role of teaching assistants

Characteristics of TAs and conditions of employment

Before findings from its core components are presented, we should note that there are two more components of the WPR model: characteristics of TAs and conditions of employment. In the interests of space, the key findings from these components are described only in brief, as they are not as strongly connected to our broader explanation for the impact results as the findings from the components of preparedness, deployment and practice; though they do add some useful context. The key finding from the component describing the characteristics of TAs was, in fact, reported above: TAs have lower level qualifications compared to teachers. This finding, in a sense, formally expresses what is largely assumed to be the case. In a similar way, the key finding relating to TAs' conditions of employment substantiates another assumption often held about TAs: that they often work beyond their contracted hours. Indeed, at Wave 3, 82% of TAs reported working extra hours on a voluntary basis. Much of this work was unpaid; only 40% of TAs were likely to be paid for working extra hours. One way in which schools routinely benefit from this goodwill is from TAs arriving at school early, or leaving late, in order to have valuable liaison time with teachers.

Preparedness

Preparedness describes two aspects of TAs' work: (1) the training and professional development of TAs and teachers (e.g., how teachers manage and organise the work of TAs); and (2) day-to-day preparation (e.g., time for joint planning and feedback between teachers and TAs).

Teacher and TA training

The Strand 1 surveys consistently found that the majority of TAs attended training events (e.g., in-service training [Inset]), and were broadly satisfied with the training they received. However, there was relatively less satisfaction with the opportunities available for training. Given the growth of TAs and their high visibility in classrooms, it might be expected that training to help teachers to work with TAs would form part of pre-service and/or Inset training. However, at each wave of the Strand 1 teacher questionnaire, 75% of teachers reported having had no such training. This was despite the fact that over the duration of the study, the proportion of teachers involved in directly training TAs and other support staff grew, so that by Wave 3, over half of teachers (55%) were involved in such training.

The Strand 1 survey also revealed that over half of teachers and SEN co-ordinators (54%) line managed one or more TAs. Yet, again, a high proportion of these line managers (66%) had not received any training for this role. Teachers who had received training in relation to working with and/or line managing TAs reported mixed views. For both types of training, the majority of respondents said it lasted only one day or less, and only half rated the training as useful.

Day-to-day preparation

The second aspect of preparedness concerns how TAs are prepared to support pupil learning. One of the DISS project's key findings was that 75% of teachers reported having no allocated planning or feedback time with the TA(s) they worked with. This was most marked for secondary schools, within which 95% of teachers claimed that they had no such time. Data from the questionnaires and the case studies revealed communication between teachers and TAs to be largely *ad hoc*; conversations took place during lesson changeovers, before and after school, and during break and lunch times, and so for the most part, relied on the goodwill of TAs, as described above.

Evidence from the case studies was particularly revealing in terms of deepening our understanding of preparedness. In interviews, many TAs reported feeling under-prepared for the tasks they were given. With little or no time to talk with teachers before lessons, TAs described how, in many cases, they had to 'tune in' to the teacher's delivery in order to pick up vital subject and pedagogical knowledge, and information and instructions relating to the tasks they supported pupils with. As post-lesson feedback was rare, TAs described being frustrated when the feedback they did provide to teachers about pupils was not utilised or acted on.

Deployment of TAs

TAs comprise a quarter of the school workforce in England and a third of the workforce in Wales, yet there remains much debate about their appropriate role. There is ambiguity because in one sense TAs can help pupils *indirectly* by assisting the school to enhance teaching (e.g., by taking on teachers' administrative duties), but, as we outline in this section, the DISS study shows that many TAs have a *direct* role supporting – indeed, teaching – pupils. Here, key findings from the DISS project are presented that show what it is that TAs do, and the effects of their deployment.

Data from the timelogs (or workload diaries) allowed us to broadly describe the work TAs do on a daily basis, based on the specific tasks and activities they carried out. The results show that TAs spent over half their day in a *direct* pedagogical, instructional role, supporting and interacting with pupils (nearly four hours), and this exceeded time spent supporting the teacher and curriculum (1.4 hours) or performing other tasks (0.9 hours).

The main finding from the structured observations of teachers' and TAs' interactions with pupils revealed key differences between the contexts in which these adults operate. Teacher-to-pupil interactions were weighted towards whole class contexts in both primary (90% of observations) and secondary schools (80%); teachers tended to walk around the classroom as pupils worked, or they addressed the class to teach, deliver instructions, etc. Teachers in primary and secondary schools infrequently worked with pupils on a one-to-one basis or with groups.

In contrast, TA-to-pupil interactions, both inside and away from the classroom, tended to be with individual pupils (82%) or small groups of up to five pupils (85%). TAs in the two phases worked in different ways: in two-thirds of observations, primary TAs supported groups, whilst TAs in secondary schools worked with individuals.

Results from systematic observations focussed on pupils rather than adults, and were based on a larger sample than the structured observations. They provide more detail on which pupils receive support. Firstly, it was found that the majority of TA support, both in and away from the classroom, was for pupils failing to make the expected levels of progress (e.g., defined as School Action or School Action Plus) or those with a statement of SEN. Teachers provided less support to these pupils than did TAs, and TAs hardly ever supported middle or high attaining pupils. There was a particularly interesting relationship between support provided by adults and the level of pupil need: TA interaction with pupils increased, and teacher interaction decreased, with the severity of pupils' SEN (Table 3).

The second key finding from the systematic observations concerns the role of the pupil in interactions with adults. It was found that pupils were nine times more likely to have sustained interactions with TAs than with teachers (44% vs. 5%). In this analysis, 'sustained' means that the pupil was the focus of the TA's attention for longer than the length of the observation interval (ten seconds). Furthermore, pupils were six times more likely to be actively involved in their interactions with TAs (63%) than with teachers (11%). Here, 'active' involvement is defined in terms of beginning, responding to or sustaining an interaction with an adult during the observation interval. In contrast, for the vast majority of their interactions with teachers, pupils were one of a crowd (87%). Further findings from the systematic observations are reported in Blatchford et al. (2009c).

Practice

The findings on TA deployment reveal how pupils' interactions with TAs are more sustained and interactive compared to those that pupils have with teachers. In this section, data gathered from audio transcripts to provide a more nuanced description of the 'practice' of TAs (i.e., the nature of TA-to-pupil interactions) are presented. Previous studies suggest some positive features of TA-to-pupil talk: often, such interactions are less formal and more personalised than teacher-to-pupil talk; they aid pupil engagement and help to keep pupils on-task; and with a TA close by, pupils have access to immediate support and differentiation (see systematic reviews by Howes et al. 2003 and Alborz et al. 2009; see also Fraser and Meadows 2008).

Close examination of the talk between TAs and pupils reveals much more about the quality of adult-to-pupil talk. As described in the methodology section, the analysis of transcripts of a sample of simultaneous digital voice recordings of teacher-to-pupil talk and TA-to-pupil talk was a unique component to the DISS study and added depth to what is already known about TA-to-pupil talk. It was found that teachers spent more time explaining concepts, provided more feedback,

Table 3. Interaction by pupil level of SEN.

	Teacher	TA
Non-SEN	55%	27%
School Action	24%	32%
School Action Plus or SEN statement	21%	41%

linked the current lesson to pupils' prior knowledge, and attempted to promote pupils' thinking and cognitive engagement with the task.

In contrast, compared with teachers, TAs were more likely to prompt pupils. It was also found that TAs' explanations were sometimes inaccurate or confusing, and TAs frequently supplied pupils with answers. There were two over-arching characteristics of TAs' talk: (1) it was frequently more concerned with *task completion* than with ensuring that any learning and understanding had taken place; and (2) TAs' interactions with pupils could be broadly characterised as *reactive*, because – unlike teachers, who guided lessons with planned learning aims in mind – TAs had routinely to respond to the needs of the pupil(s) and the lesson in the moment. For more detailed findings from the DISS project on the similarities and differences between teacher-to-pupil and TA-to-pupil talk, see Rubie-Davies et al. (2010) and Radford, Blatchford, and Webster (in preparation).

Discussion

The wider pedagogical role model

In this article, we have used the components of a new framework – the wider pedagogical role (WPR) model – to articulate the key facets of TAs' work and the effects of the support they provide. The WPR model sets TA effectiveness (in terms of pupil outcomes) within a wider context, which takes account of the factors that govern their employment and deployment, and over which they have little or no control. The model (Figure 1) shows how the components of TAs' work relate to one another.

Using the WPR model to explain the negative effect of TA support on pupils

As we stated earlier, neither the properties of pupils nor the *characteristics of TAs* are likely to account for the negative effects of TA support in a significant way.

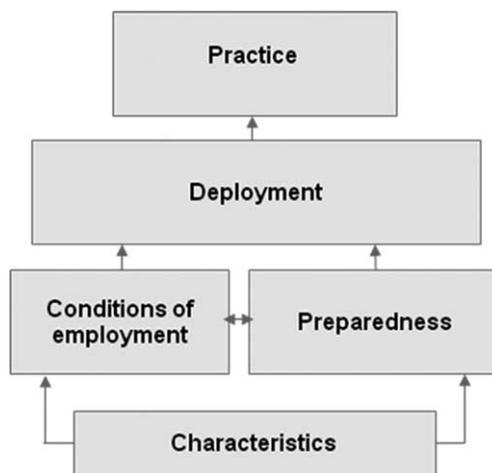


Figure 1. The wider pedagogical role model.

Alternative explanations for these provocative findings can be found by working through the other components of the WPR model. The key findings relating to TAs' *conditions of employment* found that whilst some TAs are paid to meet with teachers after school, others are not. Unless a TA, through her own goodwill, meets with the teacher in her own unpaid time, there may be no opportunity to communicate at all. It is likely that primary schools benefit more from such arrangements as teachers often work with one TA; whereas in secondary schools, teachers may work with several TAs over the course of a week. Therefore any time that is allocated for teachers to meet with TAs is spread more thinly.

We argue that the remaining components of the WPR model have a greater bearing on TA effectiveness. We will now expand on this, and begin to highlight the ways in which the components of preparedness, deployment and practice can be reconceptualised and modified, so that TAs might have a more positive impact on pupil outcomes in future.

The component of *preparedness*, as we have seen, concerns the training and professional development of TAs and teachers, and the day-to-day aspects of planning and preparation before lessons, and feedback afterwards. The issues of preparedness are strongly connected to those relating to deployment and practice. The DISS project found that many TAs go into lessons blind, unaware of the tasks teachers will ask them to do, which pupils to work with, and the ways in which they are to support learning and engagement. This, we argue, is largely due to a lack of time for teacher–TA communication prior to lessons and this – together with a lack of training – has a bearing on learning outcomes for pupils.

The DISS project has called for more joint planning and feedback time for teachers and TAs, especially in secondary schools, for which TAs are paid. Therefore, the need to prepare teachers to work with and manage TAs through formal initial training and professional development is paramount; there is little use in providing more time for teachers to liaise with TAs if it results in the same models of deployment and practice that lead to negative learning outcomes.

The findings on *deployment* allow us to make some stark conclusions about the role of TAs. To summarise the key findings: it is clear that TAs have a direct pedagogical role, supporting and interacting with pupils, usually in one-to-one and group contexts, and predominantly with pupils with SEN. The interactions pupils have with TAs are much more sustained and interactive than those they have with teachers, where pupils tend to be passive.

This kind of support might seem pedagogically valuable, but it was also found that there were serious and unintended consequences. A main consequence of the widespread model of TA deployment is that TA-supported pupils become separated from the teacher, missing out on everyday teacher-to-pupil interactions. Further, as many TAs are given the responsibility for leading interventions (e.g., for literacy), often away from the classroom, TA-supported pupils also spend less time in mainstream curriculum coverage. This is particularly the case for pupils with SEN: TAs have, in effect, become the primary educators of these pupils, and the effect of TA support on their academic progress is much worse (see Webster et al. 2010).

The DISS findings on *practice* make it clear that pupils' one-to-one interactions with TAs are not only longer, more sustained and more interactive compared with their interactions with teachers, but these interactions are much lower in *quality*. TAs are more concerned with getting tasks completed than with learning and

understanding; and inadequate preparation leads to TAs' interactions being reactive. In addition, Radford, Blatchford, and Webster (in preparation) found that a key difference between teacher-to-pupil talk and TA-to-pupil talk is that teachers generally 'open up' pupil talk, whereas the TAs 'close down' the talk, both linguistically and cognitively. TAs, therefore, do not know how to make the best use of the extended, more frequent interactions they have with pupils, compared with teachers: TAs' interactions fail to foster active pupil participation which has longer term implications for creating passive learners (see Radford, Blatchford, and Webster in preparation).

It was not possible to test the relationships between the components of the WPR model and the effects on pupils in the DISS study, and more research on this is needed. However, other findings from the project prompt serious questions about the appropriate role of TAs. The development of the TA role has proceeded on the basis of unproven assumptions about impact: that TA support raises standards and helps pupils with SEN to make progress. Taken together, the findings from the DISS study offer a serious challenge to these assumptions.

The DISS project has called for TA-supported pupils, particularly those with SEN, to receive more of the teacher's time, and to not be routinely supported by TAs; teachers are, after all, the trained experts with legal responsibility for the learning of *all* the pupils' in their class(es). Plus, teachers must be responsible for all lesson-by-lesson curriculum and pedagogical planning, especially in contexts where TAs work with pupils away from the teacher's direct supervision. Where TAs continue to interact with pupils, the DISS project recommends that teachers need to closely monitor TA-to-pupil interaction and modify these interactions where appropriate. Knowing how to do this with sensitivity requires good people management skills, and so training is an essential component of the holistic approach to improving TA practice.

But there is a more fundamental point and one that feeds into debates about the ambiguity about the TA role in relation to teachers and teaching. It can be agreed that more training is required for teachers and TAs, but before specifying the nature of this training schools must frame what is needed by engaging with some explicit questions about TA deployment that demand unambiguous answers. TAs are not as highly trained or skilled in pedagogy as teachers, and so the expectations schools have of TAs in terms of their interactions with pupils should therefore be different. Indeed, the DISS findings on the impact of TA support on pupils' academic progress arguably provide sufficient evidence for us to ask whether TAs *should* have a pedagogical role.

Should TAs have a pedagogical role?

If the answer is yes to the question concerning whether TAs should have such a role then we need to carefully consider what this appropriate pedagogical role should be. We argue that this has been given far too little attention, even though it is central to the work of a group of personnel who now comprise a sizeable proportion of the school workforce. If we take the view that they should not have a pedagogical role, then we must decide what instead is the appropriate role for TAs.

Let us consider this last issue first. Given the evidence from the DISS project and other studies that have shown TAs to have a limited or detrimental effect on pupil

progress (see Gray et al. 2007; Klassen 2001; Reynolds and Muijs 2003), what might we consider to be a valid alternative to the pedagogical role? Giangreco (2009) argues that any instruction delivered by TAs should be ‘supplemental, rather than primary or exclusive’, so that they are not required to make pedagogical decisions. One way in which we might conceive of this alternative *non*-pedagogical role is to build on the DISS findings on positive approaches to learning (PAL). TAs may be more effective in terms of having an indirect effect on pupil learning by helping with classroom organisation, limiting negative and off-task behaviour, and ensuring lessons run more smoothly. TAs might be better deployed to support pupils’ development of the ‘soft’ skills – confidence and motivation, dispositions toward learning, and facilitating collaboration between pupils – that many now see as important for work in school, but also beyond. Such factors were measured in the DISS PAL survey, and a consistently positive effect of TA support was found for pupils in Year 9. Further research is required to describe the practice that produced these outcomes, which can in turn inform TA development. It is worth noting though that research on TAs’ and pupils’ perceptions of the suitable TA attributes suggests that TAs have the requisite dispositions one associates with nurturing soft skills: adaptability; patience; sensitivity; empathy; approachability; supportiveness; responsiveness; attentiveness; and a sense of humour (Dunne, Goddard, and Woodhouse 2008; Fraser and Meadows 2008).

However, if we take the view that TAs do have a potentially valuable contribution to make to pupils’ academic development, and that they can be deployed in face-to-face pedagogical interactions, then the DISS findings make it clear that we need more clarity over just what is expected of them. The potential of TAs to directly impact pupil learning positively can be seen in several studies that collected systematic data on the impact of TAs on pupil progress in learning interventions (something that the DISS project was not designed to do). Reviews by Alborz et al. (2009) and Slavin et al. (2009) show that studies which examined the effect of TAs who have a pedagogical role delivering specific curricular interventions (mostly for literacy), tend to report a direct positive impact on pupil progress when TAs are prepared and trained, and have support and guidance from the teacher and school about practice.

Evidence for the effects of TA-led interventions on pupil learning may be positive, but data from the structured observations in the DISS project show that leading interventions accounted for only around 40 minutes of a TA’s day; for the majority of the time, their pedagogical role was less structured, less precise, largely unmonitored and it exposed weaknesses in their subject and pedagogical knowledge. Therefore, if TAs are to have a pedagogical role, we argue that it should be limited to delivering structured and well-planned interventions for which they must be properly trained and prepared. Interventions should ideally be on a one-to-one basis, but if delivered in groups, the number of pupils per group should be limited.

The development of a pedagogical role must be grounded in good evidence derived from further research. Establishing clear roles for TAs should inform training and preparedness requirements. TAs need specific formal training to teach intervention sessions – possibly alongside teachers. One key consideration will be the extent to which TAs will need to become pedagogical experts in order to overcome the instinctive, but mistaken assumption that less pedagogical skill is required when teaching pupils with SEN; if anything, a higher level of skill is needed. We can see here

how the decision to place TAs in pedagogical roles has implications for teachers' professional jurisdiction and legitimacy (Wilkinson 2005).

The DISS findings on practice show how TAs largely operate in the moment, largely due to lack of preparation and, arguably, with gaps in their own subject and pedagogical knowledge. Therefore, teachers are obligated to fully brief the TAs who work in their place. Elsewhere, practical solutions for teachers concerning lesson planning and sharing subject and pedagogical knowledge have been developed (Webster et al. 2009). Drawing on the DISS data on adult-to-pupil interaction, Radford, Blatchford, and Webster (in preparation) suggest that one relatively straightforward way in which teachers can help to improve TAs' practice is by: 'sharing their own higher order skills and knowledge and helping TAs to develop questioning techniques that open up interactions with pupils and to know how to provide quality feedback'. Finally, if TAs are to continue to teach interventions, schools should consider giving them paid non-contact time of their own for preparation, in order to avoid trading on their goodwill.

The WPR model and education effectiveness

The DISS project findings prompt us to consider modifying models of educational effectiveness to account for the changed reality in schools regarding the increase in TAs and the widening of their roles and responsibilities. The project findings show the extent to which TAs have become an everyday feature of classroom life and provide pedagogical input and, crucially, show the impact this input has on learning; the role and impact of TAs, therefore, needs to be accounted for in these models.

Whether we conceive of TAs as having a pedagogical role that directly impacts on learning, or a non-pedagogical role that indirectly impacts on learning, models of educational effectiveness must be amended and tested for validity and reliability. The WPR model offers a way of doing this, which can be absorbed into existing models. With reference to Creemers and Kyriakides' (2008) dynamic model of educational effectiveness, the classroom-level factor 'learning environment' could be modified to include TA-to-pupil interactions. All models of educational effectiveness must also extend to acknowledge teachers' 'managerial' role (Fraser and Meadows 2008; Wilson and Bedford 2008). Again, one of the classroom-level factors Creemers and Kyriakides include in their model concerns the 'management of time': the ways in which teachers maximise teaching time and pupil engagement. The ways in which opportunities to learn and time on-task are measured could be enhanced by considering 'management of people': how teachers use TAs in service of these aims.

At the TA-level, if they are to retain a pedagogical role, ideas about effective teaching need to be applied to TAs. But whether TAs adopt pedagogical or non-pedagogical roles, their work – as defined by the key components of the WPR model (preparedness, deployment and practice) – must be framed by anticipated pupil outcomes explicitly set out at the school-level.

Conclusions

In this article, findings from the DISS project have been used to show that the current and widespread model of TA deployment in mainstream UK schools has serious unintended negative effects on supported pupils' academic progress. We stress, however, that to hold TAs responsible for the impact of the support they provide is too simplistic. To demonstrate this, we developed the wider pedagogical role model, which enables us to present a contextualised picture of how TAs' practice and the effects of the support they provide need to be seen in terms of the decisions made about their deployment and preparedness, made by school leaders and teachers, which are outside the control of TAs.

Three particular components of the WPR model (preparedness, deployment and practice) were used to reveal implications of TA support and help us identify recommendations for how we might reconceptualise and modify key aspects of TAs' work so that they might have a more positive impact on pupil outcomes. Yet, underpinning these recommendations is the elementary question of whether TAs should continue to have a pedagogical role, teaching, supporting and interacting with pupils. If we decide that TAs should retain this role, it is clear that it should be more tightly defined and supported by better training and monitoring; at the least, the TA's role should be restored to a secondary educator role. If we conclude TAs should have a non-pedagogical role we must decide what this role should consist of. Further research is needed in order to answer this question; for example, a study that would develop and then evaluate school-based strategies for the effective deployment of TAs to support pupils. Finally, we have suggested ways in which the WPR model can inform adaptations to existing models of educational effectiveness in order to take account of the direct impact TAs have on pupil achievement, and how it can frame future decisions about the intentions and expected outcomes of TA deployment.

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Notes

1. In line with common usage, we use the term 'teaching assistant' (TA) to cover equivalent classroom based paraprofessional roles, such as 'teacher aide' and 'paraeducator' in the USA, and 'learning support assistant' and 'classroom assistant' in the UK. We also include 'higher level teaching assistants' in this definition.
2. All full time equivalent teachers and support staff in nursery, primary and secondary schools, city technology colleges and academies in England.
3. Including city technology colleges and academies.
4. Excluding city technology colleges and academies.
5. All full time equivalent teachers and support staff in nursery, primary, secondary and special schools in Wales.
6. Research reports and other publications stemming from the DISS project are available to download from <http://www.schoolsupportstaff.net>.

7. Measures of pupil attainment were collected at the end of the year ('outcome' scores) and at the beginning of the year ('baseline' scores). This was repeated for each of the three subjects in each of the seven year groups in the study, and so different measures had to be used to cover the wide age range involved. Government-collected assessments in English, mathematics and science were used, comprising end of Key Stage assessments, optional tests and teacher assessments, with the addition of predicted GCSE grades for the end of Year 10 scores. An advantage of these assessments is that they related very closely to the curriculum areas covered in schools. As baseline scores were controlled for, the statistical analysis addressed relative progress of pupils over the year.
8. In this paper, we have used the three commonly understood levels of SEN status used in England and Wales: School Action is the first level of SEN; School Action Plus is the second level; and having a statement of SEN is the highest level. Almost all pupils in special schools in England and Wales will have an SEN statement. The key test for initiating School Action, moving a pupil on to School Action Plus, or considering whether a statutory assessment – leading to a statement – is necessary, is whether the pupil is making adequate progress. The SEN Code of Practice (Department for Education and Skills 2001) defines 'adequate progress' and lists different kinds of progress, depending on the starting point and expectations for a particular pupil. Essentially, what is considered to be adequate progress for a particular pupil is down to the teacher's professional judgement.
9. National Curriculum levels and sub-levels are the commonly understood indicators of pupil attainment used in England and Wales. There are eight National Curriculum levels of between Year 1 and Year 9. One National Curriculum sub-level is equal to one-third of a National Curriculum level. So, in essence, there are 24 sub-levels between Years 1 and 9.

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