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Primary teachers' perceptions of whole-class teaching and learning in English primary schools: an exploratory study of perceived benefits, challenges and effective practice.

This research contributes to ongoing debate surrounding primary teachers' perceptions of key benefits, challenges and effective practice associated with whole-class teaching and learning in the primary school. A review of pre-existing literature relevant to the practice and perceptions of whole-class teaching and learning informed the scope and design of the study. A mixed methods exploratory approach was employed through the distribution of digital questionnaires and one-to-one semi-structured interviews, involving thirty-eight primary teachers employed across ten schools in the East Midlands and South East England. Statistical analysis and thematic, inductive and theoretical coding of the resulting data highlighted perceived social benefits alongside challenges surrounding whole-class adaptive teaching. The findings concluded that whole-class pedagogy may be most effective when diverse approaches to questioning and verbal discourse are collectively embedded within a shared directive for practice, and when the engagement of all pupils is continually promoted and sustained throughout teaching and learning.

Keywords: whole-class; classroom practice; teaching and learning; primary education; teacher perceptions; benefits and challenges; effective practice

Introduction

Whole-class teaching and learning can be recognised as a well-established aspect of pedagogic practice and is described by Alexander (2017, 21) as the 'commonest teaching approach worldwide'. Nonetheless, the prevalence of effective whole-class practice has been both supported (Tyk 2014; Willemsen et al. 2020) and contested in favour of alternative contexts and approaches (EEF 2018b), highlighting an area of contemporary debate. The National curriculum in England (DfE 2013) makes direct reference to the use of whole-class contexts for effective teaching and learning. Interestingly though, a strong consensus does not appear across current literature or guidance surrounding how or the extent to which whole-class approaches should be employed (Hardman 2019). For a number of years, interactive whole-class pedagogy has been recognised as broad and arguably lacking in a distinct definition or directive for practitioners (Burns and Myhill

2004, 36), and continued debate across more recent literature suggests this may still be the case. Therefore, given its frequent employment in the primary classroom (Alexander 2017, 21), exploration of teachers' practice and perceptions of whole-class teaching and learning presents a valuable research focus and formed the justification for this study.

Aims and objectives

The primary objective of this small-scale research study was to explore primary teachers' perceptions of whole-class teaching and learning, including its associated benefits, challenges and effective practice. Three key research questions were developed:

- (1) What do primary teachers perceive to be the key benefits associated with whole-class teaching and learning?
- (2) What do primary teachers perceive to be the key challenges and limitations associated with whole-class teaching and learning?
- (3) What are primary teachers' perceptions of effective practice associated with whole-class teaching and learning, particularly in relation to the teacher's use of questioning, whole-class verbal discourse and pupil participation?

Defining and contextualising whole-class teaching and learning

The concept of whole-class teaching and learning describes a particular social and organisational context for the activities, interactions and pedagogical approaches employed in the classroom. Unique to this context, is the organisation of a class of children into a single group, for whom teaching and learning can be facilitated or orchestrated by the teacher to support the progress of all pupils at once (Tyk 2014). Traditionally, whole-class pedagogy has been strongly associated with direct instruction of the same curriculum content for all pupils and characterised by structured, teacher-led approaches (Cox 2012, 43-44; Alexander 2017, 21). More recently however, recognition of the potential for highly interactive and pupil-centred pedagogies to be successfully embedded within whole-class practice has emerged (Willemsen et al. 2020; Hardman 2020). Given the variation in these characteristics, whole-class teaching and learning will be broadly defined in this research as an approach to classroom activities and interaction, in which all individuals in the class are brought together as a single, collective group.

A consensus has not yet been reached regarding the most appropriate or valuable instances within lessons for whole-class contexts to be utilised. One conceptualisation

suggests that whole-class pedagogy may best lend itself to the introduction of new concepts as lessons begin and to closing plenary sessions (Dawes 2018). Alternatively, whole-class approaches may have valuable impacts when employed frequently throughout lessons, perhaps between short periods of independent learning, to collaboratively address misconceptions and consolidate children's understanding on numerous occasions (Muijs and Reynolds 2018, 50-51).

Prevalence of whole-class teaching and learning

Over recent years, research and guidance surrounding the utilisation and effectiveness of whole-class approaches to teaching and learning have gathered interest (Muijs and Reynolds 2018, 37). Notably, national politico-educational developments employed in the United Kingdom from the end of the 1990s highlighted a renewed focus on whole-class teaching (Myhill 2006, 19). The National Strategies (DfEE 1998; DfEE 1999) advocated teachers' use of direct, purposeful and interactive whole-class instruction (Smith et al. 2004; Myhill 2006, 20; Muijs and Reynolds 2018, 49-51) and the renewed Primary Framework for literacy and mathematics (DfES 2006) sustained a focus on developing pupils' oral language, articulation and ability to debate in whole-class contexts. Evidently, a legacy of significance has been attributed to whole-class provision as a prevalent aspect of effective practice.

Nonetheless, findings from historical and current research have questioned or contested the prevalence of whole-class practice in the primary classroom. In particular, a British longitudinal study conducted by Mortimore et al. (1988) recorded only weak correlations between the use of direct, whole-class approaches and pupils' progress. Similarly, the emergence of alternative social and organisational classroom contexts, including paired and small group work, individualised learning and continuous provision, and their significance for pupils' attainment and progress, have more recently been acknowledged (Alexander 2013, 4; EEF 2018b). Consequently, a key area of contention emerges, propounding the need for the varied practices and perceptions associated with particular contexts for teaching and learning to be considered in greater depth.

Perceptions of whole-class pedagogy

Recognised merits of whole-class teaching and learning include pragmatic considerations, such as convenience for the teacher and effective use of time (Tyk 2014, 11-12). Muijs and Reynolds (2018, 39-40) highlight the potential for greater pupil

engagement offered by whole-class approaches, as children's focus and collective learning may be more easily managed by the teacher and practice immediately adapted in response to lessening engagement. Willemsen et al. (2020, 16) further promote a positive perception of whole-class practice, identifying valuable opportunities for collaborative peer learning and high-quality whole-class discourse.

Contrasting literature presents a more dubious perspective. Balancing the differentiated support, appropriate pitching and pace of whole-class teaching and learning, whilst encouraging the active participation of all pupils, may be challenging to achieve (Burns and Myhill 2004, 47; O'Connor et al. 2017, 5). Likewise, Alexander (2017, 22) notes that an organisational shift to whole-class teaching and learning does not guarantee any extent of benefit unless coupled with highly effective practice, emphasising the need to develop a greater understanding of exactly what effective whole-class pedagogy comprises. Perceptions held by the wider population of practising primary teachers towards effective whole-class pedagogy do not appear to be frequently considered in current literature.

Effective whole-class practice

Particular components of effective whole-class practice are widely recognised across current literature: effective deployment of additional adults to support the interactions and progress of all pupils (Hughes 2017; EEF 2018a), ongoing formative and summative assessment of learning (DfE 2011, 12) and high pupil engagement in meaningful, appropriately pitched teaching and learning (Florian and Beaton 2018; Hardman 2019).

Conversely, other pedagogies and outcomes centrally relevant to whole-class practice, including teachers' use of questioning, verbal discourse and the nature of pupil participation (Muijs and Reynolds 2018; Hardman 2020), are subject to more extensive debate.

Whole-class questioning and verbal discourse

Empirical research and theoretical literature offer substantial debate regarding the teacher's use of questioning and effective verbal discourse in the primary classroom (Eaude 2011, 132-138; Alexander 2013; Doherty 2017). Long-established approaches to whole-class interaction have been predominantly centred around teacher-fronted discourse, during which the teacher commonly remains at the front of the classroom and orchestrates teaching and learning through carefully controlled sequences of direct or

monologic instruction (Margutti and Drew 2014). Traditional whole-class question-and-answer sequences may frequently employ Sinclair and Coulthard's (1975) Initiation-Response-Feedback (IRF) framework, an internationally influential triadic structure for pupil-teacher interaction (Mehan 1979; Ritchhart 2015, 212). In this sequence, the teacher assumes responsibility for initiating discourse through questioning or verbal invitation, pupils offer responses, and the teacher provides feedback on the acceptability of their answers (Howe and Abedin 2013, 333-334). To facilitate IRF interaction, closed-ended or known-answer questions, to which the teacher often seeks specific, pre-determined responses, may be posed with the intention of directly evidencing children's knowledge and progress (Eaude 2011, 134; Margutti and Drew 2014, 443).

Nonetheless, in line with the ever-changing landscapes of classroom pedagogy and educational research (Alexander 2013; Richards 2018), traditional approaches to whole-class questioning and discourse have encountered considerable criticism. This is perhaps due to the recognition that, within whole-class contexts, one-to-one teacher-pupil exchanges are primarily teacher-dominated, minimising opportunities for extended pupil contributions which could more effectively challenge or build upon ideas (Mercer and Dawes 2014, 432; Ritchhart 2015, 212). Conceptualisations of effective whole-class practice have thus moved away from teacher-centred and carefully orchestrated interaction, instead repositioning the role of the teacher to a facilitator of open-ended and pupil-centred discourse (Howe et al. 2019). One approach which holds this notion at its core is the use of dialogic teaching, advocated across research conducted by Alexander (2019) and rooted in the importance of varied perspectives and collaborative verbal discourse (Skidmore 2020, 27-37). Empirical evidence has displayed an average of two months' greater progress in English, mathematics and science made by pupils participating in dialogic teaching compared to control groups, although further research and professional development initiatives may be required to facilitate effective practice in whole-class contexts (Hardman 2019).

Contrasting perspectives regarding the most effective approaches to whole-class interaction remain. Tightly orchestrated, teacher-led recitation has been valued for its potential to offer pupils improved confidence and practice 'under cover of the class's collective voice' (Sherrington 2019, 29-30). This contrasts with dialogic interaction which prioritises extended verbal discourse, authentic, open-ended questioning and greater depth of thought (Alexander 2019). These varied approaches to whole-class practice may hold greater collective potential when they are no longer considered

mutually exclusive. Open-ended and closed-ended questions may be used concurrently to better support and progress pupils' learning (Medwell 2018, 155) and if adapted for use in open-ended discussion, IRF patterns may be able to facilitate rich and valuable dialogue (Jaeger 2019) for the most effective whole-class practice.

Pupil participation in whole-class contexts

The recurrent acknowledgement of active involvement and pupil-centred interaction as necessities for effective whole-class pedagogy (Kelly 2018) is perhaps propelled by influential theories concerning children's learning and development. A particular influence is evident in the social constructivist ideas of Vygotsky (1978), who recognised that children's cognitive development is first progressed through social, interpersonal exchanges. Decades prior to this, Dewey (1956) highlighted the significance of student-centred approaches to teaching and learning, in which pupils engage in creating meaningful connections between concepts they encounter and their own experiences. To successfully achieve these notions in whole-class practice, children should encounter opportunities to develop the ability and confidence to actively participate in collaborative discussion and dialogue (Eaude 2011, 135; Muijs and Reynolds 2018, 86).

Despite this, Eaude (2011, 135) further identifies the potential for some pupils to become cautious or passive during classroom interaction and attempt to find a specific answer they believe the teacher seeks, resulting in confined classroom exchanges and restricted opportunities for rich, discursive whole-class practice (Grigg 2015, 349). Research conducted by O'Connor et al. (2017) found that the extent to which individual pupils contributed verbally to whole-class teaching and learning had no effect on their levels of achievement, signifying the possibility for the active listening of cautious or less confident pupils to constitute active participation and learning. Conceptualisations of effective whole-class pedagogy for pupils' learning and progress evidently vary across existing literature, further highlighting the need for current research to explore the perceptions held by primary teachers towards both current and most effective whole-class practice.

Methodology

A mixed methods exploratory research approach underpinned the study to facilitate open-ended investigation of participants' perceptions (Taber 2017, 143; Cohen, Manion and Morrison 2018, 20). The possibility for this approach to lead to numerous further inquiries

or offer fewer conclusive deductions compared with quantitative or explanatory methodologies was noted (Du Toit 2015), although this exploratory approach aligned closely with the interpretive discovery of participants' insights to gain a greater understanding of the identified issues and contexts (Wisker 2019). Both quantitative and qualitative data were collected to comprehensively explore perceived benefits, challenges and effective practice associated with whole-class pedagogy (Punch and Oancea 2014, 338-339; Cara 2017, 193-200). The BERA (2018) ethical guidelines and a higher institution's research ethics code and procedures were adhered to throughout the study.

Sampling

A convenience sample of thirty-eight teachers employed across ten schools situated in the East Midlands and South East England, varying in size, context and school type, participated in the research. Collectively, participants taught all year groups across the 5-11 primary age range. This opportunistic sample limited the generalisability of findings (Coe 2017, 51-55) but facilitated a sample size from which sufficient amounts of data could be analysed (Cohen, Manion and Morrison 2018, 218). All participants completed a research questionnaire and a stratified random sample of four primary teachers then participated in individual interviews. Stratified random sampling ensured that the participants were responsible for teaching in a variety of year groups (Owen 2017, 128-130) and different schools, limiting the influence of 'professional socialisation' on the study (Biesta 2015).

Research methods

The study's key research questions were investigated using questionnaires and one-to-one semi-structured interviews, initially trialled through pilot studies, alongside triangulation with secondary literature. Online questionnaires were completed by all thirty-eight participants involved in the research study. A wide range of question forms, including dichotomous and multiple-choice questions, rating scales and opportunities for extended responses, were employed (Cohen, Manion and Morrison 2018, 471-481). The digital distribution and completion of questionnaires ensured that data could still be gathered despite restrictions impacting school settings as a result of the COVID-19 pandemic (DfE 2021). However, as remote participation was involved, questionnaire design required careful construction to limit possible ambiguity (Burton, Brundrett and Jones 2014, 67). One-to-one semi-structured interviews were then conducted with a

stratified random sample of four individual participants from the consenting questionnaire respondents. Flexible, open-ended and follow-up questions, centred around participants' whole-class teaching practice, were used to facilitate more extensive additional insights and perceptions (Burton, Brundrett and Jones 2014, 125). Interviews were conducted online using a secure digital platform and auditory recordings were produced, enabling responses to be transcribed or summarised once interviews had concluded.

Data analysis

Participants' questionnaire responses were collated and analysed according to each question posed. Qualitative questionnaire responses were tabulated and inductive coding used to identify themes and shared perceptions, which then informed subsequent findings, as illustrated in Table I. Chi-square statistical significance tests were also completed to further develop evidence-based deductions (McLellan 2017). Interview recordings were analysed using three data coding approaches, conducted sequentially to interpret perceptions that emerged and reduce any possibility of unintentional researcher bias (Punch and Oancea 2014, 225-226; Evans 2017, 265-268). Thematic coding focused on each of the study's overarching research questions in turn, identifying perceived benefits, challenges and elements of effective whole-class practice within participants' responses. Following this, inductive coding more broadly interrogated perceptions offered by participants, and theoretical coding highlighted links between interview responses and ideas explored across previous literature. Table II displays the application of this coding process to an extract of a participant's interview transcript. Finally, findings that emerged from this analysis of questionnaire and interview data were triangulated alongside the prior review of literature to strengthen conclusions (Punch and Oancea 2014, 231; Smeyers and Smith 2014, 24).

[TABLE I HERE]

[TABLE II HERE]

Research findings

Each key research question will be considered in turn and research findings compared and collated to recognise emerging themes and shared or contrasting perceptions (Bell and Waters 2018, 261-262).

Exploring perceived benefits of whole-class practice

Questionnaire respondents were asked to provide a numerical score between -3 and +3 within a semantic differential scale displayed in Figure 1, representing the extent to which they perceive whole-class practice to be beneficial or unbeneficial for children's learning.

[FIGURE 1 HERE]

A mode score of 2 was selected by over half of the questionnaire respondents, as displayed in Figure 1. This implies a somewhat shared perception that whole-class practice may be beneficial for children's learning. It should be noted that the scores used to produce this semantic differential scale may have been perceived differently by individual participants, limiting the degree to which specific or reliable perceptions can be interpreted from these numerical values (Burton, Brundrett and Jones 2014, 67). However, a mean score of 1.97 and small standard deviation of 1.01 indicate that the majority of data is distributed relatively closely around the mode and mean scores; a positive perception of whole-class practice for children's learning was therefore shared by the majority of participants in this particular research sample, supporting the positive stances assumed by Tyk (2014) and Muijs and Reynolds (2018, 39-40). Evidencing similar perspectives during their interviews, Teacher 4 stated 'When I do use [whole-class teaching and learning], generally I'd say it's beneficial' [Line 27] and Teacher 3 commented that whole-class practice 'can be beneficial' [Line 17]. The use of the term 'generally' and modal verb 'can' concur with the perception that various benefits of whole-class teaching and learning exist but are not guaranteed unless coupled with high-quality provision for pupils (Alexander 2017, 22).

[TABLE III HERE]

To explore the range of benefits that participants perceived to be associated with whole-class practice, questionnaire respondents were asked to detail their ideas in an expanding response box. From participants' coded responses in Table III, three key themes emerged, evidencing various social, educational and pragmatic benefits associated with whole-class pedagogy.

The potential for pupils' collective progress and collaborative peer learning were ranked equally as the most frequently recognised advantages of whole-class practice. Teacher 1 identified 'children learning from each other' as the most significant advantage [Lines 142-148] and the quality of communication that can emerge from a wider group of pupils interacting together was considered most valuable by Teacher 3 [Lines 37-38]. These results highlight a contention with the notion that alternative contexts for teaching and learning should instead be utilised to further pupils' progress and attainment (EEF 2018b). However, further exploration into a range of possible contexts for teaching and learning and their impacts on pupils' attainment would be required to generalise this deduction.

Questionnaire participants referred to the benefits of peer learning, inclusion and pupils' social development a total of 33 times, exceeding the collective totals of references to both educational and pragmatic themes. This focal perception supports the theory underpinning Vygotsky's (1978) notion of progression facilitated through social, interpersonal exchanges. The benefits that children can gain from collaborative learning and interaction, listening to their peers' responses and openly contributing their ideas were the predominant advantages of whole-class practice as perceived by the primary teachers in this research sample.

Interestingly, all four interviewees referred to pragmatic benefits that they associated with whole-class practice. In particular, Teacher 2 [Lines 25-26] and Teacher 3 [Lines 17-18] recognised the convenience and effective use of time offered by whole-class approaches, signifying the value of practical advantages for the teacher, ranked within Table III more highly than some educational benefits, which should not be overlooked (Tyk 2014).

Exploring perceived challenges of whole-class practice

[TABLE IV HERE]

Whilst Figure 1 indicates that only 1 questionnaire respondent considered whole-class practice to be unbeneficial for children's learning, all participants identified challenges that they perceived to be relevant to whole-class pedagogy, as evidenced in Table IV.

Thematic contrasts are apparent between the responses presented in Table III and Table IV. Whilst participants referred largely to social and collaborative concepts as benefits of whole-class practice, perceptions relating to the theme of adaptive teaching appeared most often within the challenges teachers described. The provision of differentiated support formed the most frequently recognised challenge, highlighting a significant complexity that teachers may encounter when striving to meet the diverse needs of all pupils throughout whole-class teaching and learning (O'Connor et al. 2017). When interviewed, Teacher 2 and Teacher 4 offered further insights, recognising that the challenges of 'making sure every child understands what you mean' [Teacher 2, Lines 21-22] and ensuring appropriate levels of support and extension for all pupils [Teacher 4, Lines 42-43] can be exacerbated by whole-class contexts. This shared perception perhaps results from an interpretation of whole-class practice as an approach which enables only a single, predetermined input to be pitched to pupils, as identified in both questionnaire and interview responses.

Muijs and Reynolds (2018, 39-40) note the potential for whole-class contexts to offer greater ease in terms of classroom management for the teacher, as input and activities can be immediately altered in response to pupils' levels of understanding, behaviour and engagement. Interestingly though, perceptions of classroom management as both a benefit and challenge associated with whole-class practice emerged from Table III and Table IV, evidencing diverse perspectives held by the participants in this study. Whilst classroom management was more frequently recognised as a challenge than an advantage of whole-class teaching and learning, a larger sample size would be required to offer greater internal validity and to substantiate claims of a contrast with the positive perception detailed by Muijs and Reynolds (2018, 39-40).

To explore and compare the significance of the individually identified benefits and challenges associated with whole-class teaching and learning, chi-square statistical significance tests were conducted, underpinned by a null hypothesis that the observed variations of frequencies in Table III and Table IV were due to chance. However, χ^2 values of 41.44 and 59.29 were calculated for the coded tables of benefits and challenges respectively, indicating the probability that these frequency distributions were due to chance to be less than 0.01%. The null hypothesis could thus be rejected and the

differences in frequencies by which participants referred to individual codes considered statistically significant. The chi-square result for participants' perceptions of key challenges was particularly high, furthering the recognition of differentiated support, challenging all pupils and ensuring high pupil engagement as predominant perceived challenges of whole-class practice (O'Connor et al. 2017).

Exploring perceptions of effective whole-class practice

100% of the participants in the research study indicated that they utilise whole-class teaching and learning as part of their pedagogic practice, supporting the acknowledgement of whole-class practice as a widely employed approach (Alexander 2017, 21). Teacher 2 stated, 'every lesson, every day, I use whole-class teaching' [Line 8]. Teacher 1 [Line 10] and Teacher 3 reflected on their use of whole-class contexts primarily for the delivery of input and for feedback or plenary sessions, reinforcing the perspective of these particular instances as valuable opportunities for effective whole-class practice (Dawes 2018).

Conversely, Teacher 4 recognised that the effectiveness of whole-class practice is dependent on the specific curriculum area and intended content, alongside pupils' prior learning and the ongoing assessment of their understanding [Lines 10-26]. Whole-class teaching and learning can therefore be largely effective 'where it's used well' [Teacher 4, Line 30] and requires carefully considered, high-quality pedagogical approaches, suitable for whole-class contexts, to be truly effective (Alexander 2017, 22; Willemsen et al. 2020). Exploring this idea, Figure 2 displays participants' collective perceptions of the extents to which traditional and more recently established approaches to questioning and verbal discourse should be employed for the most effective whole-class pedagogy.

[FIGURE 2 HERE]

The review of existing literature highlighted established debate surrounding the most appropriate pedagogies for effective whole-class practice. Traditionally influential approaches, including tightly orchestrated questioning and teacher-led verbal discourse (Sinclair and Coulthard 1975; Eade 2011, 134; Margutti and Drew 2014; Sherrington 2019, 29-30), contrast with the more recent emergence of open-ended and pupil-centred

pedagogy (Howe et al. 2019; Skidmore 2020, 27-37). The perceptions evidenced by Figure 2 range vastly between subjective frequencies of ‘Never’ and ‘Always’, cohering with this contention and highlighting the strong and opposing opinions held by some participants.

Responses of ‘Always’ and ‘Often’ were most frequent across more recently established approaches, including dialogic teaching and the use of open-ended and follow-up questions, suggesting that the use of these particular pedagogies was considered more effective by the teachers in this research sample. Similarly, monologic talk lacked any responses of ‘Always’ from participants and closed-ended questions received the only response suggesting that they should ‘Never’ be employed. These results align with the recognised values of pupils’ interaction and involvement in whole-class learning, far beyond teacher-dominated questioning and verbal discourse (Dewey 1956; Mercer and Dawes 2014; Ritchhart 2015, 212).

Nonetheless, all approaches presented in Figure 2 received responses stating that they should be utilised ‘Often’, suggesting that traditional and emerging pedagogies should not be perceived as mutually exclusive for effective whole-class practice. A more compelling approach, and one valued by Teacher 1, [Lines 192-196], Teacher 3 [Lines 55-56] and Teacher 4 [Lines 72-75], may be to embed both types of approaches within effective whole-class pedagogy: layering open-ended, closed-ended and follow-up questions (Medwell 2018, 155) and combining structured IRF discourse patterns with dialogic and pupil-centred interaction (Jaeger 2019).

The nature of pupil participation in whole-class teaching and learning, identified as a perceived challenge in Table IV, presents another key area of consideration for the teacher (Kelly 2018; Muijs and Reynolds 2018, 86). When asked whether the active contribution of all pupils towards whole-class verbal discourse is required for effective practice, only a small proportion of research participants (13.2%) perceived active pupil contributions to all instances of verbal discourse to be necessary. Aligning with research conducted by O’Connor et al. (2017), these findings may be due to the recognition that pupils’ active listening can also constitute effective learning and facilitate progress. Similarly, Teacher 2 [Lines 58-60] noted that some children may lack confidence or feel reluctant to offer verbal contributions to whole-class dialogue, supporting Eade’s (2011, 135) standpoint. Teacher 4 implied that pupils could benefit more greatly from opportunities to converse with support staff, learning partners, or small groups of peers prior to transitions to whole-class contexts. Other participants presented similar opinions

that, whilst all pupils' verbal participation in teaching and learning is desirable, children's individual needs and social development should inform the teacher's expectations of extents to which verbal contributions should be offered.

To conclude the questionnaire, participants were asked to provide up to three words they perceived to best describe effective whole-class teaching and learning; their responses, sized according to frequency, are visually depicted by Figure 3.

[FIGURE 3 HERE]

References to the concepts of engagement and interactivity were significantly more frequent as displayed by Figure 4, furthering the perception that these aspects of teaching and learning are essential indicators of effective whole-class practice (Ritchhart 2015, 212; Kelly 2018; Hardman 2020). However, Table IV indicates that 18 responses identified pupil engagement and active pupil participation as significant challenges of whole-class pedagogy, presenting an interesting area of complexity faced by these teachers. To overcome this challenge, interview participants emphasised their perceived values of active and practical learning to ensure that 'it's hard for [the children] to switch off and get bored' [Teacher 1, Lines 116-125]. It was also suggested by Teacher 2 [Lines 53-54] that pupils are given ownership of their learning through open-ended and exploratory whole-class activities for effective, interactive and engaging whole-class practice.

Evidently, a variety of perceptions were offered regarding the concepts and priorities that constitute effective whole-class practice. This range of perspectives concurs with the long-standing conceptualisation that shared directives for effective whole-class pedagogy remain to be established (Burns and Myhill 2004; Hardman 2019). Similar ideas were evidenced within interview responses, including the perception offered by Teacher 1 [Lines 145-146] that further professional development, specific to pedagogy in whole-class contexts, may enhance the effectiveness of teaching and learning. In any case, more extensive research, involving a larger sample of participants, may be needed to improve the reliability, generalisability and practical application of these deductions to the development of subsequent teaching practice.

Conclusion

This research has explored and analysed teachers' perceptions of current and effective whole-class practice across the primary age range in England. The utilisation of whole-class teaching and learning as part of all participants' pedagogic practice corresponded with the noteworthy recognition of its frequent employment in the primary classroom (Alexander 2017, 21). Predominant benefits of whole-class teaching and learning recognised by the primary teachers in this research sample surrounded opportunities for pupils' collective progress and collaborative peer learning, aligning closely with the theory of progression underpinned by social, interpersonal exchanges (Vygotsky 1978). Conversely, key and statistically significant challenges perceived by participants related largely to the theme of adaptive teaching, particularly in ensuring the provision of differentiated support that effectively engages, challenges and meets the holistic needs of all pupils (Burns and Myhill 2004; O'Connor et al. 2017).

Teachers' conceptualisations of effective whole-class practice generated valuable interpretations; notably, perceptions promoted the layered employment of both traditional and more recently established approaches to the teacher's use of questioning and verbal discourse (Medwell 2018; Jaeger 2019). Moreover, perceptions emerged regarding the need for more established directives and ongoing professional development, specific to whole-class pedagogy, to further sustain the effectiveness of teaching and learning in whole-class contexts (Burns and Myhill 2004; Hardman 2019).

Implications for further research and future practice

The findings of this study contribute to continued debate surrounding perceptions of whole-class practice in the primary classroom, and are useful in informing valuable focuses for future research. The use of random probability sampling could be considered to improve the generalisability of findings to the wider research population, and data gathered from a larger research sample may enhance the study's degree of reliability (Coe 2017). Moreover, a larger sample size may enable the exploration of possible themes or disparities in perceptions held by different sub-groups of the research population. Potential influences linked to the specific year group or key stage taught, school type, geographical location or degree of participants' teaching experience could be considered. Action research could be conducted to explore connections between the theoretical ideas and perceptions associated with whole-class pedagogy, such as those identified in this study, and observations of whole-class teaching and learning in practice. Additionally,

the practice and perceptions associated with the alternative contexts for teaching and learning highlighted in recent literature (Alexander 2013, 4; EEF 2018b) could be explored to enable comparative analysis between contexts.

Most notably, this research implores teachers and researchers to consider their own perceptions of whole-class teaching and learning, deconstruct their approaches, and critique the impact of these on classroom pedagogy and practice, to offer the best possible provision and outcomes for pupils.

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Declaration of interest statement

The authors report there are no competing interests to declare.

Data access statement

All data underpinning this publication are openly available from the University of Northampton Research Explorer at <http://doi.org/10.24339/74f65778-cd3a-45db-a718-e26ae3be475b>

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Figure/table captions

Figure 1: A vertical bar chart presenting primary teachers' scores regarding the extent to which whole-class teaching and learning is beneficial or unbeneficial for children's learning.

Figure 2: A stacked horizontal bar chart presenting primary teachers' perceptions of how frequently approaches to questioning and verbal discourse should be utilised within effective whole-class practice.

Figure 3: A visual representation depicting words perceived by primary teachers to best describe effective whole-class teaching and learning, with words sized according to frequency of response (larger word size corresponds to greater frequency).

Table I: Example of data analysis process for coded qualitative questionnaire responses, followed by indicative findings.

Table II: Extract from coded interview transcript and indicative findings.

Table III: Coded questionnaire responses presenting primary teachers' perceptions of the key benefits of whole-class teaching and learning.

Table IV: Coded questionnaire responses presenting primary teachers' perceptions of the key challenges of whole-class teaching and learning.

Table I: Example of data analysis process for coded qualitative questionnaire responses, followed by indicative findings.

8 In your opinion, for whole class teaching and learning to be effective, must all pupils actively contribute to whole class talk in every session?

8.a If you selected Other opinion, please provide some details of your opinion:

8.b Can you give a reason for your opinion?

'No' Questionnaire Responses	Codes
There are many ways of contributing - talk is only one of them	Other ways to contribute and evidence learning
It is necessary for most of the class to contribute to class discussions. Others learn by listening to their peers.	Active listening
Not all chn need to contribute to learn.	Not essential for learning
Some children don't like to draw attention to themselves. Some like to sit and absorb the information - the important thing is knowing who these children are.	Individual needs Active listening
Some pupils like to listen to other pupil's contributions. Just because they don't appear to be actively contributing does not mean they are not learning.	Active listening
Some children struggle greatly with engaging with the lesson verbally, however, they can absorb everything that has been said by others and transfer this into their activity.	Active listening Other ways to contribute and evidence learning
They can be involved in paired or group talk, not necessarily with the adult leading the class. However, different methods of responding, other than verbal need to be given for children who may not have good oracy skills.	Other ways to contribute and evidence learning Importance of adaptive teaching
Children can benefit a lot from listening and being involved in the process.	Active listening
Some children feel very uncomfortable presenting information in whole class situations. Need to accommodate all children.	Individual needs Importance of adaptive teaching
Some pupils listen but don't want to participate. Teacher needs to judge which ones are not talking because they are shy but still learning and which ones are not talking because they are on another planet of their own and not even taking in what's being said.	Active listening Individual needs Teacher's judgement needed
Ideally children would all actively contribute but some children can take in teaching and therefore effectively learn without needing to actively take part in discussion, just by listening.	Active listening
Some children will listen and reflect on other children's ideas before they are happy to contribute themselves. They will demonstrate their understanding in other ways.	Active listening Other ways to contribute and evidence learning
Sometimes they learn just as much by listening to their peers.	Active listening
It always feasible within the lesson Sometimes children need to actively listen to help develop their understanding	Active listening

They may not know the answer and may need support from peers or teacher	Further support may be needed
As long as they are actively listening and you can tell this from their written work.	Active listening Other ways to contribute and evidence learning
Depending on the size of the class, this is not always feasible, but it is important to encourage as many children as possible to contribute in some way.	Not always feasible
Children can still be engaged and listening without talking. It would also extend the time they are sat which is when you will start losing them.	Active listening Effective use of time
Sometimes, listening for short periods of time to promote learning can be just as effective	Active listening Effective use of time
Some children do not enjoy contributing and the "fear" of this may lead to disengagement. The teacher needs to be aware of this and adapt accordingly.	Individual needs
Children learn by listening to other ideas	Active listening
Some children are not always comfortable working this way. They can still engage and listen to ideas well but they do not have to always participate orally to learn if that gives them anxiety to do so.	Individual needs Active listening
Listening to others can be beneficial to those who are uncertain in a topic or subject.	Active listening Further support may be needed

<u>Codes ('No')</u>	<u>Frequency</u>	<u>Ranking</u>
Active listening	17	1
Individual needs	5	2.5
Other ways to contribute and evidence learning	5	2.5
Effective use of time	2	5
Further support may be needed	2	5
Importance of adaptive teaching	2	5
Teacher's judgement needed	1	8
Not always feasible	1	8
Not essential for learning	1	8
<u>Total:</u>	36	

Table II: Extract from coded interview transcript and indicative findings.

<p>Teacher 1 Interview Transcript (Questions and Answers)</p> <p>Thematic Coding Linked to Research Questions (Benefits, Challenges, and Effective Practice Associated with Whole-class Teaching and Learning)</p>	Inductive Coding	Theoretical Coding (Links to Literature)
<p>1 Interviewer: I just wanted to check that you are happy and give your</p> <p>2 consent to participate again just before we get started?</p> <p>3 Teacher 1: Yep, absolutely. I do.</p> <p>4 Interviewer: Wonderful. Ok, so what year group or year groups do you</p> <p>5 currently teach at the moment?</p> <p>6 Teacher 1: I teach year 2.</p> <p>7 Interviewer: Year 2, ok. Do you usually use whole class teaching and</p> <p>8 learning in your own practice and if you do, how and when do you</p> <p>9 usually use it?</p> <p>10 Teacher 1: Yes, I'd say I use it quite a lot. I use it mostly for input and plenaries</p> <p>11 I would say. For example, at the beginning of a given lesson, let's say maths, I</p> <p>12 would use whole class teaching and learning for roughly 15, 20 minutes. I like</p> <p>13 to get the children active during that time so I'll get them on the carpet with</p> <p>14 whiteboards quite a lot or practical resources, and then I tend, not always but</p> <p>15 more often than not, to then send them off to be more independent and myself</p> <p>16 and my teaching assistant will work with a small group, and then at the end of</p> <p>17 the lesson we often will come back together to kind of share what we've learnt.</p> <p>18 So those are the times I'd say when I use whole class teaching and learning. I</p> <p>19 think the only exception and the only lesson where I use whole class teaching</p> <p>20 and learning for the whole lesson is phonics.</p>	<p>Frequent use of whole-class approaches</p> <p>Input and plenaries</p> <p>Pupil engagement</p> <p>Active pupil participation</p>	<p>Dawes (2018)</p> <p>Kelly (2018)</p>

Table III: Coded questionnaire responses presenting primary teachers' perceptions of the key benefits of whole-class teaching and learning.

<u>Theme</u>	<u>Code</u>	<u>Frequency</u>	<u>Ranking</u>
Social	Peer Learning	20	1.5
	Inclusion	8	4
	Social Development	5	7
Educational	Collective Progress	20	1.5
	Assessment Opportunities	4	8.5
	Quality of Verbal Discourse	4	8.5
	Addressing Misconceptions	3	10
Pragmatic	Effective Use of Time	7	5
	Convenience	9	3
	Classroom Management	6	6
<u>Total:</u>		86	

Table IV: Coded questionnaire responses presenting primary teachers' perceptions of the key challenges of whole-class teaching and learning.

<u>Theme</u>	<u>Code</u>	<u>Frequency</u>	<u>Ranking</u>
Adaptive Teaching	Differentiated Support	26	1
	Challenging All Pupils	13	2.5
	Individual Intervention	5	6.5
Lesson Delivery	Appropriately Pitched Input	6	5
	Appropriate Lesson Pace	2	9.5
	Effective Assessment	3	8
Pupil Attitudes	Active Pupil Participation	5	6.5
	Pupil Engagement	13	2.5
Pragmatic	Organisation	2	9.5
	Classroom Management	8	4
<u>Total:</u>		83	