

Title: 'Why is this child in special education?': A cultural-historical activity theory-based research intervention with senior UK education leaders on assessment for, and allocation of, specialist educational resources

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ABSTRACT

Aims: This paper focuses upon systemic change in a local authority decision-making process (DMP) for allocating specialist resources for children with complex educational needs in a local authority in Scotland. The aim of the paper is to provide reflections and insights into the learning of senior managers and leaders of children’s services to lead organisational change processes. *Method:* The original research study design was a two-stage, CHAT-based Developmental-Work-Research (DWR) formative intervention with nine senior managers over an 18-month period. Stage one, reported in this paper, comprised four, three-hour sessions enabling expansion of participants’ learning through a collective zone of proximal development (ZPD). Stage two was evaluation of the intervention as a change process framework and evaluation of implementation of the new model considered as a cycle of expansive learning (discussed elsewhere). *Findings:* Expansive learning and transformative agency in DWR sessions occurred via four key turning points. An initial focus on problems with, and then improvement of, the DMP shifted to a re-configuration of children’s services leading to the generation of a new model for meeting the children’s needs in mainstream school settings. Findings indicate that a CHAT-based intervention can support the development of new ways of learning, leadership and working to enable public services to make more effective use of resources. *Limitations:* Several groups such as social workers, allied health professionals, parents and young people were not represented directly in this study. Further research using DWR with these groups would contribute to a broader understanding of how systems within children’s services impact on service users. *Conclusion:* CHAT has theoretical and practical relevance for professionals who engage in collaborative real-world research. Findings from the study contribute to the body of knowledge for leadership learning and intervention around change processes in educational systems.

Keywords (5): Cultural-Historical-Activity Theory; organisational change; complex needs, leadership

Introduction

For senior educational managers and leaders, the need to consider the development of children’s services in uncertain times is significant (Black et al., 2019; Booker, 2012; Burnham & Philips, 2019). Public service contexts and inherent problems therein are often described as ‘wicked’, that is complex, chronic and not easily solvable (Conklin, 2005; Grint, 2008). However, Head (2019) highlights the need for better theorizing of public services that provides ‘explanatory capacity and generative power’

(p.192). A systemic approach such as Cultural-historical activity theory (CHAT) may provide this together with a more nuanced understanding of organisational change for senior managers of Children's services (Edwards, 2017). It may support the development of new ways of learning, leadership and working that enable public services to meet obligations and to make the best use of resources whilst creating supportive working environments for staff. To achieve this, Gutiérrez (2012) refers to the need for an 'archaeological dig' in educational systems and change processes with multiple explanations at various levels of analysis (p.23).

CHAT-informed approaches are used increasingly in educational research from early years through to higher education focusing upon learning and development at both the individual and institutional levels (Postholm & Vennebo, 2020; Hedegaard & Edwards, 2019; Leadbetter, 2017; Bligh & Flood, 2017; Gedera & Williams, 2016). A systematic review of CHAT studies in educational contexts found that the approach provides tools to understand better the complexity of disability and educational inequalities together with dilemmas inherent in the co-existence of inclusive practice and specialist provision (Bal et al 2021).

But CHAT also offers opportunities for research that can stimulate systemic change using Developmental Work Research (DWR), a CHAT-related intervention strategy, the focus of which is transformational change (Tomizawa, 2020; Cencia et al., 2020; Ellis, 2011; Ellis et al., 2015). A limited number of UK-based studies have focused upon how these issues play out operationally and strategically via DWR intervention research in a locally situated educational context (Edwards, 2015; Edwards et al., 2009). Few studies have examined how senior managers and leaders in UK public service organisations and children's services understand and relate to the systems over which they have power and authority (Daniels & Edwards, 2012), which forms the focus of the present paper.

CHAT: Theoretical Perspective

CHAT is located in the broader field of socio-cultural theory and is a distinctive aspect of this because of the focus on collective *activity and practice* in systems within their cultural and historical contexts (Cole, 1996; Cole et al., 2019; Engeström, 2015; Engeström 2009; Roth & Lee, 2007). The origins of CHAT are based on the historical, dialectical materialism of Marx and the socio-cultural focus of Vygotsky commonly described through the evolution of the three generations of activity theory (Daniels, 2018): Vygotsky's notion of mediating artefacts between subject and object (first generation); Leont'ev's object-related collective activity (second generation), and Engeström's network of interacting activity systems (third generation) (Engeström, 1999; Leont'ev, 1978; Vygotsky, 1978).

Viewed through a CHAT lens, human activity systems as socially situated contexts may be tension-laden and contradictory (Engeström, 2008). Contradictions are viewed as fundamental constituents of complex systems, functioning as driving forces for systemic change. They may manifest within and between elements of a work activity system or network of activity systems experienced by individuals as conflicts, critical conflicts, dilemmas and double binds (Engeström, 2015, 1997; Engeström & Sannino, 2011). They may also be revealed through analysis of ethnographic data from observations, interviews, focus groups, and CHAT-based intervention research (Edwards et al., 2009; Engeström, 2000). Children's services often lack structural definition and coherence because they are dynamic, non-linear, and unpredictable (Leadbetter, 2017) and thus may benefit from a CHAT analysis or intervention to identify tensions with leadership, professional roles, tools and resources used, and the policy/practice/ethical frameworks that underpin professional activity (Burnham & Philips, 2019, Turner et al., 2018).

Formative interventions: Developmental Work Research & the Cycle of Expansive Learning

Developmental Work Research (DWR) is a formative CHAT-based interventionist methodology using identification of systemic contradictions as a basis for joint construction of new models of activity between researchers and participants. Engeström (2007b) describes it as a framework for understanding

collective or expansive learning that leads to knowledge creation and 'radical exploration' where learning is 'co-terminus' with new forms of activity (p.4). Engeström's cycle of expansive learning (seven expansive learning actions) in work settings has been described as a collective journey through the zone of proximal development (ZPD) of activity systems within which established work and educational practices are first challenged then developed by members of the systems (Sannino et al., 2009; Cole & Gajdamashko, 2009). It provides a means by which to track iterative cycles of change in complex systems (Virkkunen et al, 2010). (See Figure 1).

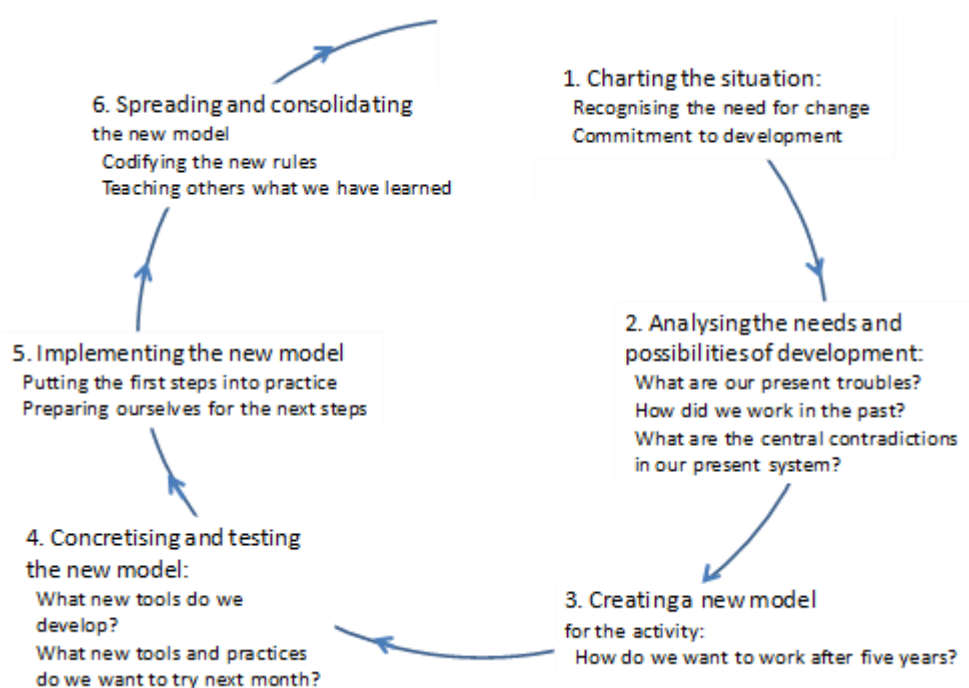


Figure 1: Adapted version of cycle of expansive learning (After Virkkunen et al, 2010; after Engeström, 1987)

In DWR, the researcher and participants work collaboratively to focus upon historical analysis of contradictions within an activity system to understand how current practice has been shaped and how future practice may be shaped (Engeström, 2007a, b). This analysis mediates an expansion of, or shift in, the focus/purpose/object motive of current activity leading to new forms of work practice. The researcher plans and facilitates this expansive learning process using a repertoire or toolkit of CHAT concepts, theories and epistemological principles together with ethnographic material in the research

sessions (or change laboratories) to stimulate discussion between the participants and the researcher (Cole & Gajdamashko, 2009; Sannino, 2011; Sannino & Sutter, 2011). A key aspect of DWR interventions in comparison to broader design-based interventions is the non-directive role of the researcher and the agency of participants to expand their own learning as they shape the direction and outcome of the intervention 'not fully anticipated by the researcher' (Sannino et al., 2016, p.601). DWR interventions, as a form of research or enquiry, have the potential to generate new knowledge and models of working practices in a *mediating social space* (Ellis et al., 2015).

A key theoretical principle in DWR is dual stimulation predicated on Vygotsky's notion of the instrumentality of tools used to solve problems within a learner's ZPD (Engeström, 2007b; Vygotsky, 1978). This is achieved by presenting the *first stimulus* of double stimulation as ethnographic or 'mirror' data gathered from systems under analysis. The *second stimulus* consists of key concepts from CHAT together with triangular models of activity systems used as heuristic devices to map out activity as interacting activity systems. Participants use the tools provided by the researcher to build on their everyday understandings of work practice. The theoretical principle in DWR is based upon Davydov's concept of ascending from the abstract to the concrete (Sannino & Engeström, 2018; Davydov, 1995).

The present study focused upon the learning and development of senior managers in Children's services to consider potential for change in policy and practice for meeting complex educational needs. Problems with the decision-making process (DMP) around a local authority's allocation of specialist resources had been identified via internal local authority reviews around inclusive practice of schools, negative parental experiences, categorization of children's educational needs and inequity of access to resources.

Research aims and objectives

The study was embedded in an evaluation of the extent to which a CHAT-based DWR intervention could bring about organizational change processes to improve outcomes for children and young people via expansive learning of senior managers of children's services (Sannino & Engeström, 2018; Sannino et al., 2016) utilising a two-stage process of intervention and implementation of a new model over an 18-month period. This is described as a cycle of expansive learning over 6 phases, a modification of Engeström's original cycle (See Figure 2).

The present paper focuses upon insights and findings from the DWR intervention phase that encompassed phases 1-4 of the cycle involving researcher-participant collaboration in historical analysis of DMP practice, consideration of its potential for change and development of a new model. Evaluation of the implementation phases 5 and 6 over a 2-year period will be presented in a forthcoming paper.

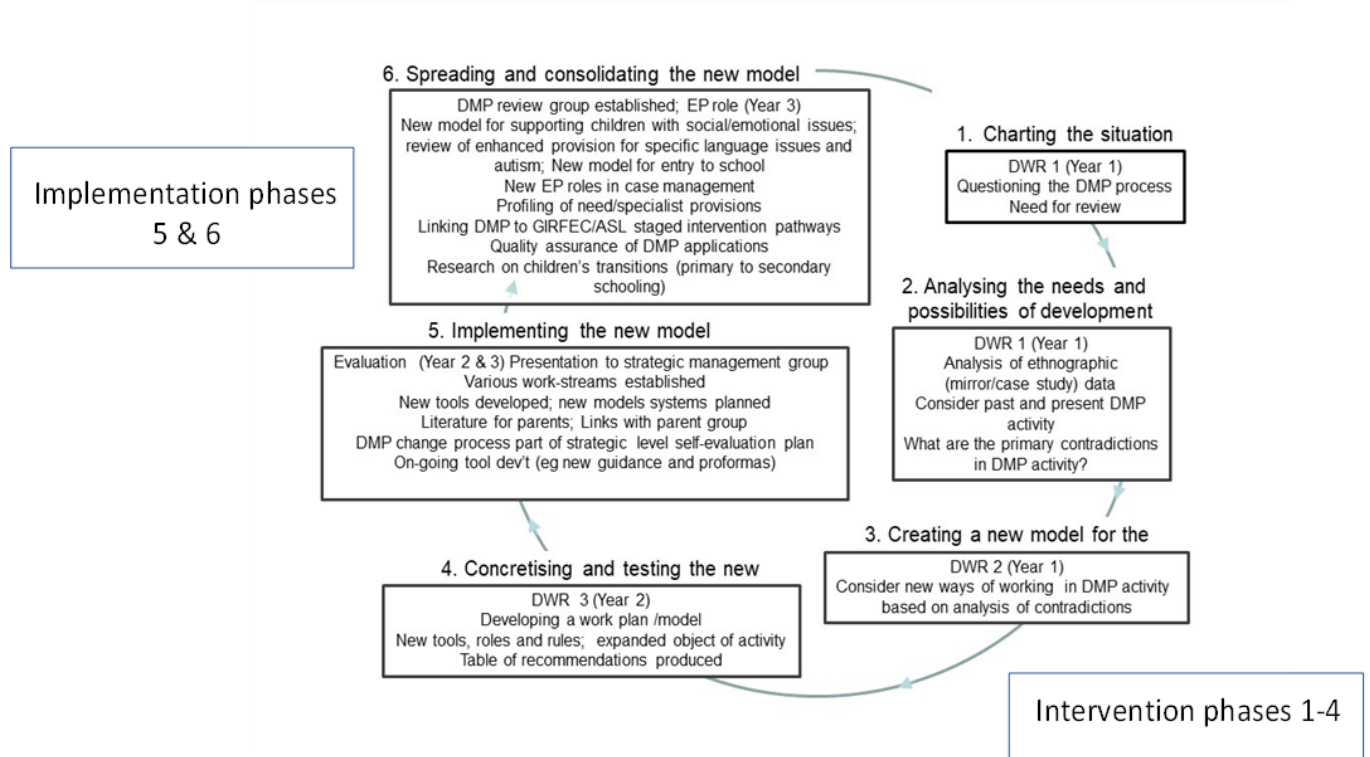


Figure 2: Intervention and implementation phases of the study as a cycle of expansive learning

Four research objectives of the original study were:

Stage 1: Intervention - Phase 1-4 of cycle of expansive learning (current paper)

- To work collaboratively with the educational leaders and managers who participated in the study to undertake a CHAT analysis of contradictions in the DMP and to consider its potential for change
- To mediate senior managers' learning around reconceptualization of the DMP using CHAT theoretical concepts and epistemological principles (expansive learning, transformative agency, and generativity) and DWR methodology

Stage 2: Implementation - Phase 5-6 of cycle of expansive learning (second paper to be published)

- To evaluate the usefulness of the DWR intervention as a change process framework
- To evaluate longitudinal impact (2-year period) of the intervention on strategic and operational changes in policy and practice

Method

Research design

A qualitative, flexible case study design strategy was selected as the research centred on professional reflection and learning in a collaborative process between participants and the researcher. The case study was the local authority's decision-making process (DMP) for the allocation of specialist educational resources. Case study design was used because it focuses upon *how* and *why* questions and the gathering of multiple data sources in an iterative research process to explain or make sense of social complexity in a specific context over time (Yin, 2017). The guiding research question was: In what ways does DWR support senior education managers and leaders to understand their DMP as an activity system and to engage in a process of change?

A CHAT-based research design was selected as it offers theoretical, methodological and intervention coherence. Its emphasis upon complex social phenomena and dialectical relationships between connected systems that may act as entry points for research matched the nature of the DMP under study (Hedegaard & Edwards, 2019). The DWR sessions or *change labs* were considered as a collective zone of potential proximal development at the level of the system within which participants critically examined the DMP. Engeström (1999) describes DWR methodology as supporting and structuring 'developmental re-mediation of work activities' with sessions designed as 'spaces for reflection', a 'simultaneous separation and embeddedness' of day-to-day work activity (p.16). Ethnographic data and case studies enabled participants and the researcher to reflect on professional practice and to analyse the extent to which the current DMP supports or hinders families, children and young people when considering educational placement.

Reflexivity of participants

The consideration of participant reflexivity is important because of the qualitative nature of the intervention and the emphasis on their agency in DWR interventionist methodology. Participants reflected openly about their own value systems, biases and prejudices in DMP activity. For example, a Head Teacher discussed her disappointment at colleagues who appear to resist 'the spirit of inclusion' when considering support for children with significant educational needs and an EP considered whether it would be better for her to work in an authority 'where there are no special schools'. One participant reflected that '*the research framework (DWR intervention) has enabled us as professionals to learn and develop, to consider our own views and biases, and those of others within a very complex system*'. Another spoke of having '*a lot to learn*' in terms of the '*many things we take as based on fact are really based on assumption*' welcoming opportunity for '*open and sustained professional debate*'.

Reflexivity: The Role of the Researcher-Practitioner

The researcher made explicit her awareness of levels of seniority between the participants and how this may influence group dynamics. For example, she stated how her perception of power differentials might influence her own behaviour if her own view on a topic contradicted the views of those with more senior designations. She explained to the group a possible source of conflict between knowing what her line manager's views were about the EP role in the DMP process and those of her own.

She also brought participants' attention to the issue of power and authority of the group to act on behalf of the authority to bring about change to the DMP process. Questions were addressed specifically to the remit and object of the group's activity. The researcher was aware of the need for sensitivity of this questioning given the power and authority of several participants who held senior positions within the department in terms of strategic and operational responsibility. The extent to which the group had power and/or authority to make changes was discussed in detail in later sessions. In this regard, Blackler (2009) emphasizes the need for greater theorization of power and politics in CHAT intervention studies, explaining that power may be understood as participant resources used in the 'complex and contested processes' of formative interventions such as DWR. In this sense, power may also be viewed as a mediator of collective activity.

The lead researcher experienced her role simultaneously as researcher and EP working with partner agencies, senior education managers and authority officers. In effect, she was a member of the system being researched and acknowledged both the benefit and challenges of being an insider researcher such as bias and in-depth knowledge of the system under study (Fleming, 2018; Trowler, 2014, 2011). She aimed to be explicit regarding her position in the study by explaining to participants that her contributions to the discussions would be subject to analysis as would their contributions. To demonstrate methodological rigour, the researcher was guided by the need to demonstrate credibility and trustworthiness of findings (Silverman, 2020; Miles et al., 2014). In so doing, she made the multiple

role of the CHAT researcher 'visible, recordable and analyzable' (Engeström et al., 2003, p.312). Blackler (2009, P.39) refers to the CHAT researcher's role being concerned with 'problem analysis, problem solution, solution implementation, and change evaluation' to recognise the expansive potential of work activity once tensions and contradictions have been identified.

Generalizability and transferability

Claims are made in this paper for the transferability of the research findings and outcomes in realist terms as providing evidence for mechanisms in specific contexts that can be generalizable to similar but not identical contexts (Robson & McCartan, 2016; Easton, 2010; Sayer, 2000; Pawson and Tilley; 1997; Bhaskar, 1997). Furthermore, Tashakorri and Teddlie (2003) refer to the 'inference quality' of a study to demonstrate the quality and transferability of the conclusions drawn. For CHAT findings, Engeström has claimed that their validity and generalizability could be based on 'viability, diffusion and multiplication of new models in similar activity systems' (Engeström 1999, p.36). For example, most countries need to make provision for children with complex educational, medical and physical needs, often in a policy context that promotes inclusive practice. Therefore, similar issues must be addressed to those that arose in this study.

Ethical approval

Ethical approval for the study was granted by a university's ethics committee. The study adhered to the Local Authority Psychological Services research policy.

Structure of the DWR sessions

Nine senior education professionals involved in the operational and strategic management of the DMP were invited to participate in the study. They attended four, 3-hour sessions over a period of 10 months, negotiated as per availability of all the participants. DWR interventions require time in between

sessions to enable participants to take their learning into the workplace and to gather ethnographic data to share in subsequent ones. Each session was audio and video recorded and transcripts of each previous session were shared with participants (Sannino et al., 2016). Participants also created their own representations of the DMP using CHAT concepts and the triangular model of an activity system. The multiple data sources brought into sessions by the participants served as stimuli to facilitate critical discussion. The intervention was evaluated by all participants as a group during discussion in the fourth session and individually two weeks after the intervention.

Description of participants

Sampling

The decision was made to confine the study to participation of education professionals and authority officers who work directly at the operational and strategic levels of the DMP and who have formal authority, power and agency to effect change within it. Seven of the nine participants participated in all four sessions. One participant attended the first and the third, another participant attended only the second. Details of the levels of experience and seniority of the participants are in Table 1.

Table 1: DWR intervention Participant Data

Participant	Initials in text, tables & figures	No of years in senior educational positions	Scope of senior Role and function
Manager of ASN services	EO (education officer)	20 + years	Manager of specialist educational support professionals; budget holder for ASN resources and specialist provisions; policy-maker and key decision maker
Principal of psychological services A	EP	20 years	Manages and leads a large EPS; previous experience of PEP in another EPS; 30+ years' experience in education
Area principal of psychological services B	EP	15+	Member of the EPS management team; manages one of four teams within the EPS; 30+ years' experience in education
Manager of educational quality	EO	15+	Manages educational quality improvement officers who support teachers in schools to meet

improvement officers			the needs of children with ASN/complex needs; 30+ years' experience in education
Head teacher of special school 1	HT	15+	HT of a school for children with complex needs; 30+ years' experience in education, mainstream and specialist settings
Head teacher of special school 2	HT	10+	HT of a school for children with complex needs; 20+ years' experience in education, mainstream and specialist settings
Senior ASN manager	EO	20+	Legal background; in ASN managerial role for 15+ years
Educational quality improvement officer	EO	10+	20+ years as teacher; support teachers in schools to meet the needs of children with ASN/complex needs; 30+ years' experience in education

Data collection and analysis

Multiple data sources can be seen in Table 2. Each workshop session was audio and video taped and a transcription service was used because of time restrictions on the researcher between each of the sessions. Transcripts were the key sources of data and they were also used as a critical, reflective tool by participants in each subsequent session. This enabled a developmental approach to be taken as the participants reflected critically on their own and each other's comments thereby contributing to their collective learning process. Statements were challenged, clarified or expanded upon and formed the basis of new topics for discussion. The researcher also kept memos and notes of key discussion points in each session and shared these with the participants. The researcher and participants also developed and shared their own triangular model of the DPM as an activity and these provided additional sources of data. Data is capable of being reduced and explained by more than one theory or approach. Two approaches were used in data analysis in the present study: thematic analysis (Braun & Clarke, 2022) and CHAT analysis (Yamagata-Lynch, 2010).

Table 2: Data collection strategy for DWR intervention

	Timescales	Data collected	Ethnographic data brought into sessions to support discussion
Intervention phase	<ul style="list-style-type: none"> • 2 September DWR session 1 • 12 December DWR session 2 	<ul style="list-style-type: none"> • Full transcripts of each 3-hour DWR sessions (Session 1: 23, 891 words; Session 2: 27, 453 words; 	<ul style="list-style-type: none"> • Case studies of children being assessed for specialist school placement • Policy/practice documents • DMP protocols and procedures

	<ul style="list-style-type: none"> • 30 March DWR session 3 • 20 June DWR session 4 • July questionnaire returns 	<p>session 3: 22,032 words; session 4: 13,678 words)</p> <ul style="list-style-type: none"> • Participant modelling of the DMP using their own CHAT diagrams • Group evaluation of the intervention in session 4 • Individual questionnaires completed 2 weeks after the final session 	<ul style="list-style-type: none"> • Reports based on internal authority review of the DMP • Examples of other decision-making processes • Relevant peer-reviewed papers • National policy documents • Legislation
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CHAT conceptual tools such as the ‘3x3 surface tool’ were used to consider past, present and future activity, and triangular models of the DMP as an activity system were used to mediate participants’ learning that also provided sources of data (Leadbetter, 2017). See Figures 3 & 4. Collaborative analysis with the researcher and participants involved familiarization with the data and generation of inductive codes which were then grouped in relation to elements of the activity system (Engeström, 2015; Yamagata-Lynch, 2010; DeCuir-Gunby, et al., 2011). For example, when the participants developed their own models of the DPM as an activity system, ‘*assessment tools and exchange of reports*’ were typically grouped within ‘tools’ while ‘*the process nowhere is explained to parents and*’, ‘*not being an open multi-disciplinary process*’ *policy*’ were grouped within ‘rules’.

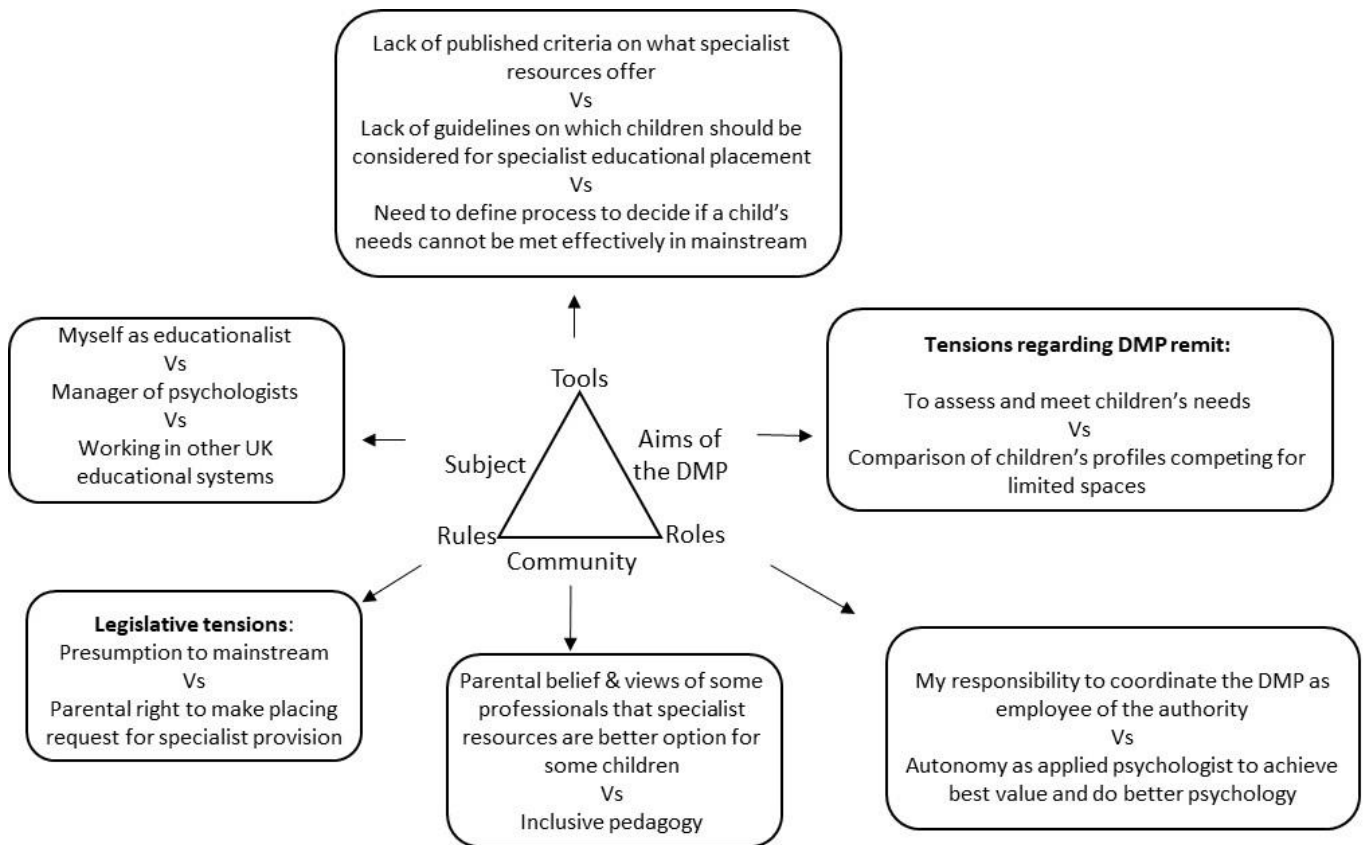


Figure 3: DWR participant's Activity system for the DPM

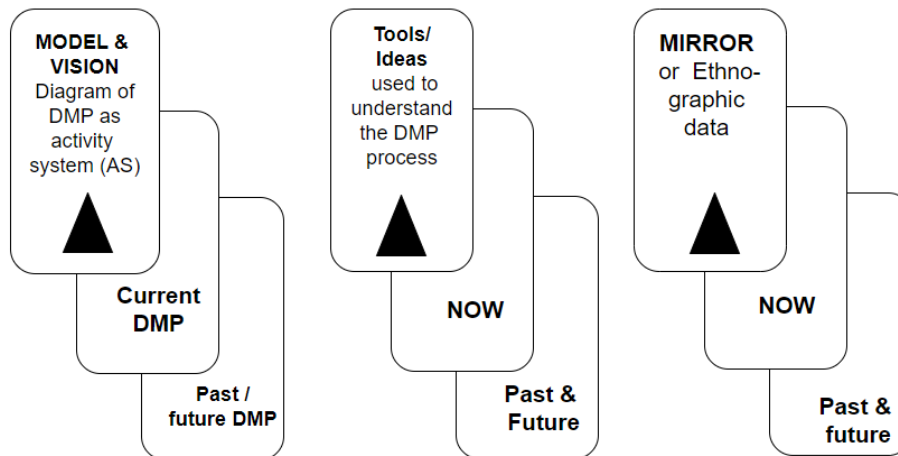


Figure 4: Diagram of '3x3 surface tool' to facilitate discussion in DWR sessions

(Adapted from Engeström, 2007b; Leadbetter, 2017).

The researcher further analysed all the multiple sources of generated data after the intervention, via the method of constant comparison until data saturation had been reached using matrices, tables and diagrams to display analytical findings. Matrices were used simultaneously as a means of data presentation and data analysis, providing visibility of the data analysis, and making large amounts data accessible whilst maintaining complexity of the findings with cross-site and within-site comparisons (Cohen et al., 2018; Robson & McCartan., 2016; Miles et al., 2014; Hammersley, 2012). Participants' comments were selected to illustrate key themes in the analysis. Frequency of codes within each theme were provided in data tables.

Findings: An analytic account of what happened in the DWR sessions

1. Analysis of systemic contradictions in the DMP process

The first activity in the DWR intervention was to share the key principles of CHAT and the DWR process. The researcher then engaged participants in an activity system analysis of the DMP to understand how current processes had developed historically around placement children with complex needs in specialist provisions. The DMP process was perceived as overly complex and non-transparent, lacking coherence as a resource allocation and decision-making model to meet children's needs in mainstream or specialist provision. Contradictions *within* elements of the DPM activity system were considered first. Identified problems, dilemmas and tensions were expressed as manifestations of, or hypotheses about, contradictions appearing repeatedly in the data sets around professional roles, the object of DMP activity, assessment tools used and legal/policy constraints. See Table 3 & Figure 5.

Assessment tools

Specifically, participants identified a problem with assessment methodology in the DMP process based on the extent to which standardised assessment results and diagnostic labels may influence placement decision-making for children with complex educational, physical and medical needs. It reflects tensions between 'within-child' assessment approaches based on standardised measurement and comparative

description of deficit or difference in contrast to a more interactive, ecological model that considers an individual's needs holistically and the adaptations required in a specific educational context to meet those needs. This enduring dilemma is well documented in the literature (Black et al., 2019; Florian, 2018).

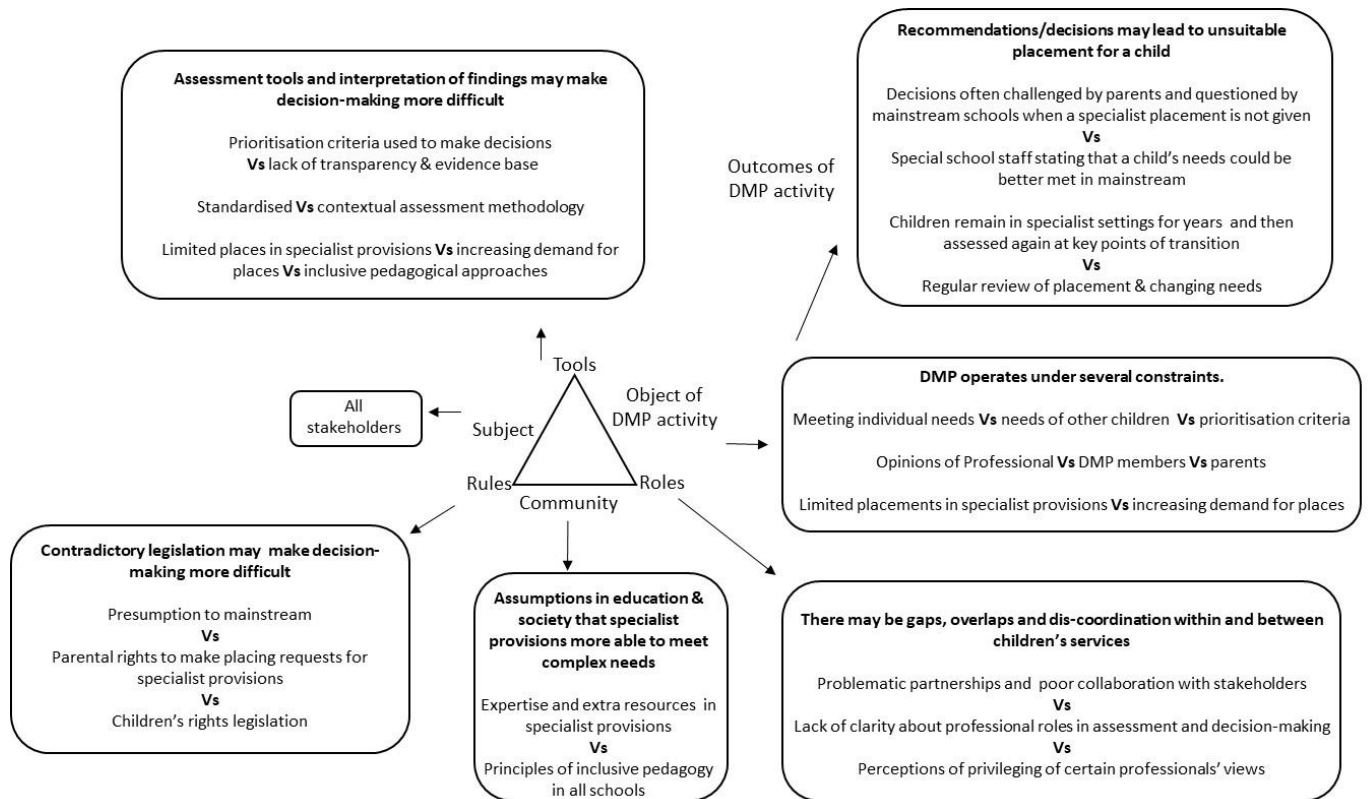


Figure 5: Hypothesizing contradictions in DMP activity: Participants' views

Professional roles and remits

At the time of this research, EP assessment was considered important by the DMP although various sources of evidence from a range of professionals such as paediatricians, social workers, speech and language therapists as well as parental views were also submitted with DMP applications. Educational Psychologists played a key role in the assessment of children's needs for a specialist provision and were sometimes viewed by other professionals and parents as having a privileged status and voice whilst many EPs wanted to distance their involvement in the DMP as it compromises their professional

positioning and values. This topic was at the fore of DWR discussion because of parental experiences of problematic collaboration, different assessment methodologies and lack of clarity about professional roles in support of their child during the application process. Parents regularly reported a lack of trust and confidence in a drawn-out process to make the best decisions for their child.

Rules

Contradictory legislation was viewed as a key barrier to quality decision-making in the DMP by participants. Scottish education is replete with laws that invoke presumption to mainstream, parental choice and children's rights (Boyle & MacKay, 2017) and they influence and inform decisions made about special educational placements. When assessing applications for them, members of the DMP considered parental requests for a specialist placement that may have been at odds with professionals' adherence to inclusive pedagogy, the presumption to mainstream and children's rights to be educated with their peers. Such contradictory rules within the DPM often led to informal challenge of placement decisions and formal challenge via the Additional Support Needs tribunal system. Local authorities defended their decisions with reference to limited places, strong assessment information and the principles of inclusive pedagogy underpinned by the legal presumption to mainstream. At times, parents insisted on mainstream schooling for children with the highest level of needs for whom the DMP recommended specialist provision. In such cases, the level of adjustment required to meet needs in mainstream may or may not have been considered unreasonable by a tribunal.

Community

Participants focused upon the principles and values underpinning inclusive pedagogy, the dilemmas of special education and assessment /categorization of need as factors that may have compromised the quality of the DMP. Recognizing that they reflect more broadly persistent and unresolved tensions in education (Black et al., 2019; Cencia et al., 2020; Florian, 2018; Florian & Beaton, 2018), participants turned their attention to children's rights to a mainstream educational experience and societal

assumptions that specialist educational provisions have more capacity to meet complex needs via smaller class sizes, elaborated curriculum and staff expertise despite a lack of evidence for better educational and life outcomes for children taught in specialist provisions (Lindsay, 2017).

Contradictions between elements of the activity were then discussed that lead to an integrative, summative statement. See Figure 6. ('Lightning rods' are often used in the triangular schematic of an activity system to represent contradictions between elements of the DMP activity system). Participants referred to the DMP working under the constraints of problems with assessment methodology, contradictory legislative rules, and ineffective partnership working that may compromise the quality of DMP decision-making. In turn, children's needs may not be met and their rights to a mainstream educational experience may be breached. More generally, participants emphasized the limited evidence base of the benefits of special schooling alongside societal assumptions that it is beneficial.

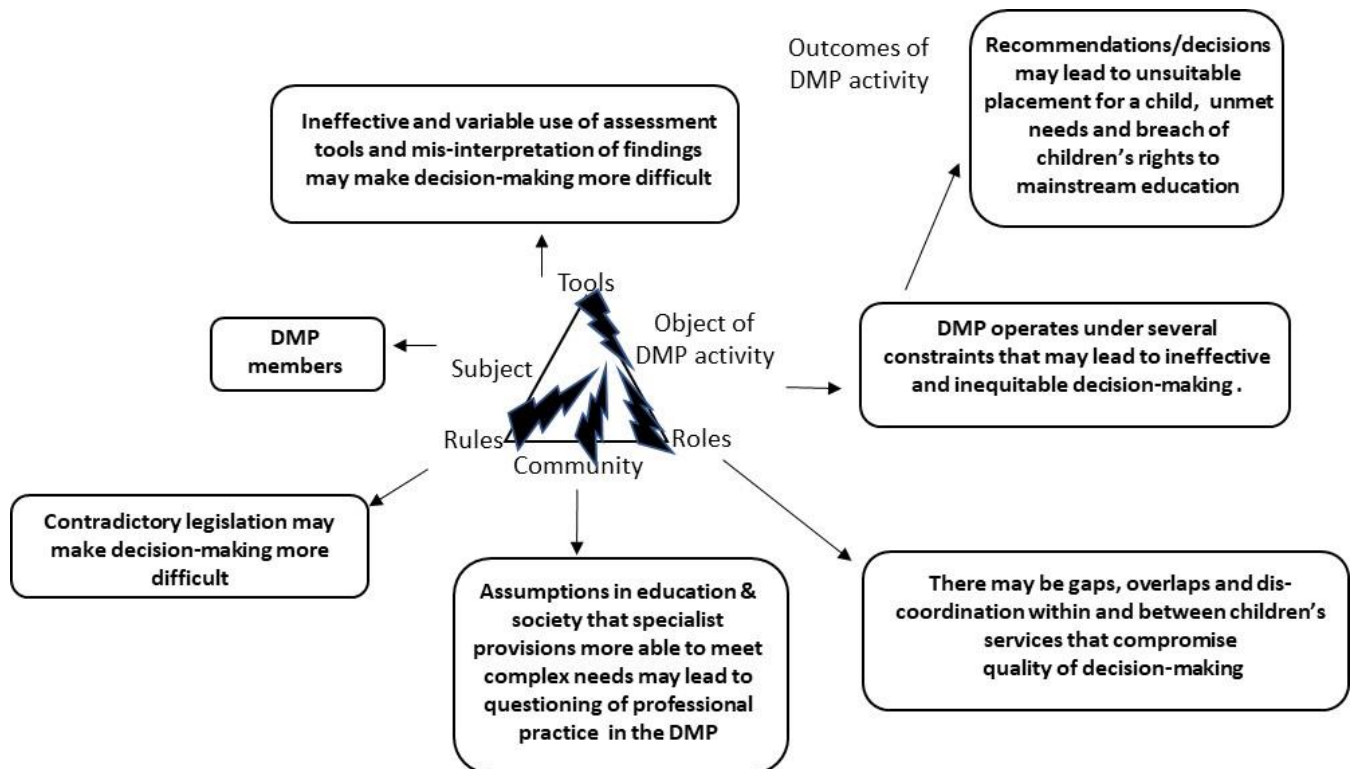


Figure 6. Contradictions *between* elements of the DMP activity system

Table 3: Participants' Views of Object of DMP Activity expressed as Contradictions

Level One Categories	Level Two Category: Themes expressed as contradictions (number indicates instances in each level 2 category)	Illustrative Quotes of Level Two Categories (EO-Education Officer; EP - Principal Educational Psychologist HT – Headteacher; R- Researcher)
Object / outcome of DMP activity	<p>Questioning the rationale of DMP (12)</p> <p><i>DMP for Assessing needs Vs DMP for decision-making</i></p>	<ul style="list-style-type: none"> • EO 1 <i>It may never have worked. It may no longer be relevant. Or it may be that we just need to refresh it... but there was a professional forum, which could look at the child's needs and make recommendations in terms of school placement or forms of support. But there was intended to be some clear water between those two processes.</i> • EP 2 <i>A faceless bureaucrat looking at 683 applications thinking of all of that paperwork and trying to look right across the authority at special schools and where and who's to go what and where and.</i>
	<p>Historicity of the DMP process (13)</p> <p><i>Quality assessment of need Vs Prioritisation of need vs Equity of allocation of limited resources</i></p>	<ul style="list-style-type: none"> • EP 2 <i>I don't think the quality of assessment process was of any use. I think that for parents it was a complete lottery about who they got and who was there and who they saw in terms of the school. They could choose any school that they wanted across the region. The implications resource wise were huge in terms of transport</i> • EO 2 <i>The reason is because it is implicit in the process that we have to have comparative discussions about children because we are prioritising. DMP isn't allocating places but it is prioritising. So, I find that DMP quite rightly is saying, what did we say about that child, let's go back to that one, let's make sure we are being consistent</i> • HT 1 <i>Although we are all sitting here saying we've got children in the wrong places in our schools and I think that is the point made earlier that there are some kids in special schools that really could be better placed in mainstream</i>
	<p>Inclusion and the DMP (18)</p> <p><i>Mainstream Vs specialist provision</i></p>	<ul style="list-style-type: none"> • EO 3 <i>Someone had talked about the received wisdom that special schools are better.</i> • EO 1 <i>Essentially there's if people who are operating on that assumption then they will see the special schools offering something over and above mainstream schooling.</i> • EP2 <i>The very fact that they [special schools] exist, what does that say to families that there is something that intrinsically out there, there is something better.</i>

The primary contradiction in the DMP.

Participants referred to tensions around social justice agendas, limited resources, cost-efficiency of services and professional accountability for outcomes-based targets (Avis, 2009; Hartley, 2009; O’Flynn, 2007). A CHAT analysis of these could be expressed as the primary contradiction in DMP activity depicted as the cost (exchange value) to local authorities of professional salaries and educational resources and specialist provisions and the use value of using public money to provide such services and resources (Warmington & Leadbetter, 2010). See Table 4.

Professionals adhere to the value of supporting children with additional needs just as doctors adhere to the value of promoting health in patients (Engeström, 2000) and, while they may appear to provide a free service at the point of delivery in the UK , their work activity is also subject to the same social and economic relations as those who work in private industry (Edwards et al., 2009). As such there may be conflict with the ethical and moral value bases of professionals and their status as employees of institutions within which limited resources are targeted at those assessed to be most in need. Billington (2000) considers the economic factors involved in public service work with children and families:

To understand the circumstances in which children’s needs are assessed, are either met or unmet, therefore, it is important to keep in mind the ways in which the economic nature of the processes fuel the professional and decision-making activities which affect (individual) children’s lives (2000, p.72).

Table 4: Participants’ Views of DMP Activity regarding the Primary Contradiction

Level One Category	Level Two Categories (number in brackets indicates)	Illustrative Quotes of Level Two Categories (EO-Education Officer; EP - Principal Educational Psychologist HT – Headteacher)
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	instances in each level 2 category)	
Primary contradiction of the DMP process	Public services Vs Consumerism and market forces (3)	<ul style="list-style-type: none"> • EO 1: <i>There hasn't been a proper conciliation with consumerism within the context of public services</i> • EO 1: <i>Making a decision about meeting a child's needs within a public educational system and that involves a whole number of factors like salaries, costs of special school estates, transport and so on</i>
	Meeting needs vs cost of resources Vs Competition for resources (5)	<ul style="list-style-type: none"> • EO 2: <i>In my view we've seen the budget as a fixed factor. I went to this meeting and councillor X made a speech at the beginning during which he referred to the fact that resources are very over-stretched and then just stopped and basically the message was you have to manage within the available resources. That's not good enough. It's a competition.</i>
	Educational legislation Vs fiscal decisions 4)	<ul style="list-style-type: none"> • EO 1: <i>What does the Additional Support for Learning Act mean...if on the one hand it has spirit which supports inclusion but it has a letter which in many instances goes against that...it has its own internal contradictions and some of that has to be worked through...it was totally unrealistic but hey this is politics</i> • EO 2: <i>The politicians are in charge of budgets and I think as civil servants we should also have the means of lobbying politicians rather than budgets being a fixed fact that we just put up with eternally. Why isn't the council tax going up from time to time? It's ridiculous.</i>

2. Expansion of the object of activity in the DMP: Participants' learning and development

Analysis of session transcripts led to the development of key themes defined as four qualitative turning points in the participants' expanded learning (see Table 5 & Figure 7). Turning points emerged from analysis of the discursive interplays recorded in the transcripts of each DWR session (Sklaveniti, 2020; Shotter, 2006). In this way, the participants and the researcher noticed, constructed and reconstructed turning points in their thinking and learning. Key turning points occurred principally in session two, repeated and expanded further in subsequent sessions as a new model and implementation plan were being developed. One participant noticed that the discussion was leading to talk about 'transformational change, actually talking about root and branch change making totally different decisions'.

The turning point (TP) themes may be considered as evidence to gauge the extent to which expansive learning had occurred in the ZPD of DMP activity as individuals challenged and broke away from 'dominant trails' of established professional practice. Within the ZPD, participants were supported by the researcher to consider the problems of DMP activity as a collective mirror of stakeholder perspectives (first stimulus) that led to theoretical understandings of the process and, in turn, to the modelling of new ways of working using second stimuli of CHAT conceptual tools and participant-created tools. Expansive learning of participants at the level of the collective developed from individual representation of the DMP to a joint activity system that captured systemic contradictions in roles, tools and rules with a contested object of DMP activity.

Table 5: Expansive learning actions as qualitative turning points: Dimensions of agreement

Dimensions of agreement: Illustrative quotes		
(EO-Education Officer; EP - Principal Educational Psychologist; HT – Headteacher) (number in brackets indicates instances in each category. P= positive comment and N = negative)		
Key Turning points	Positive Illustrative quotes	Negative Illustrative quotes
1.Review of DMP (16; P=14 N=2)	EO3: <i>There is evidently work that needs to be done. It's making the DMP more transparent, more explicit, more rigorous.</i> HT1: <i>Clearly there are things we need to learn to improve the quality of discussion about special school placement; improve the evidence base for decision-making.</i>	EP2: <i>I don't want a DMP review. No matter who wants to do this but it has to be that it fits into the context now. The DMP was a context 12 years ago</i> EO2: <i>You could re-design the DMP but it could become more efficient at doing the wrong thing</i>
2.Broaden scope of DMP (15; P=12; N=3)	EO1: <i>It's really important and we do have a massive opportunity as we are in a process of self-evaluation of provision of ASN and this could be located within that bigger picture – relating to other parts of what is a much bigger system out there</i> EO2: <i>There needs to be something, a sort of thinking done at a higher level of abstraction in terms of a DMP against a backdrop of presumption to mainstream</i>	EP1: <i>There's a lot of wiggle room that the authority requires to look at complex needs and to support in the best way we can; we don't want to close that down</i> EO3: <i>It's the mess of decision-making, the to-ing and fro-ing that requires comparative discussions to enable prioritisation to meet the most complex needs- we need a DMP that enables this</i>
3.Develop inclusive	EO3: <i>We need to think about assessing ASN and then meeting needs. The DMP is</i>	EO1: <i>Some children just need to be in more specialist settings regardless of</i>

<p>capacity of schools (23; P= 18, N=5)</p>	<p><i>just part of that wider system of meeting needs</i> EP2: <i>What is our capacity to meet those needs in mainstream school? We need to support schools to be more effective in meeting learners' needs</i> HT2: <i>The DMP is not an end product; too many people see it as that. Either mainstream or special school and then say right, it's done</i></p>	<p><i>how inclusive mainstream schools are; we will always need a DMP</i> EO2: <i>What about placing requests and parental choice? We sometimes end up in tribunals because we are splitting hairs about complexity of need. What evidence do we use that says complex needs can be met in mainstream?</i></p>
<p>4. Re-configure children's services (25; P=23, N=2)</p>	<p>EP2: <i>Engagement with families, services to a level that we really maybe hither to have not been really working on</i> EP1: <i>You are talking about transformational change, actually talking about root and branch change making totally different decisions</i> EP2: <i>Making the links between legislation, policy and practice to support inclusion is the highest agenda for me</i> EO3: <i>Our thinking has changed and we want to radically look at what we're providing and how we're providing that and who's doing that</i></p>	<p>EO2: <i>I'd like to think that GIRFEC is going to promote more open discussion and partnership working, a real culture of co-creation but it is just too top heavy for us at the moment</i> EO3: <i>And you have to get all the professionals to buy in to it and not just say they'll buy into it- how do you do that, create that?</i></p>

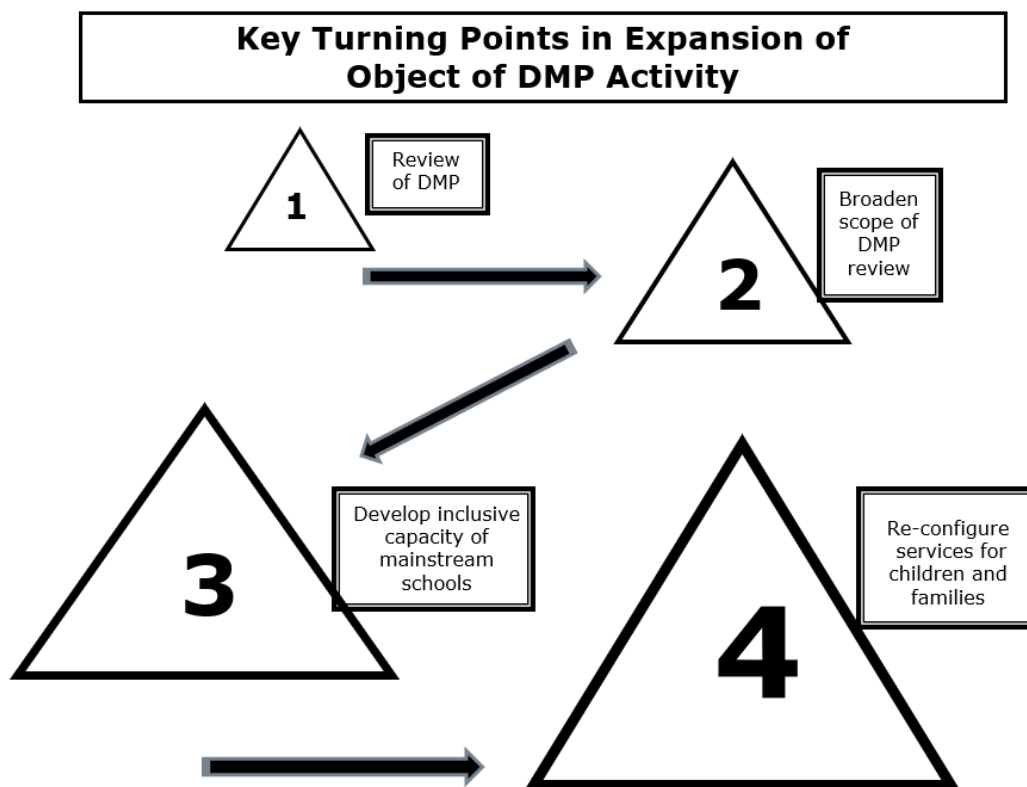


Figure 7: Key turning points in expansion of object of DMP activity.

1st TP: Expansion of the Object of DMP Activity: A need to Review the DMP

Initial discussion in session 1 focused upon both problematic and positive aspects of the DMP. For example, one participant thought that the DMP 'finds creative solutions' when considering the complexity of children's needs whilst another commented on the purpose of the current model of decision-making, emphasising 'equality, good information and quality of decision-making'. An EP focus on the historical aspect of the DMP as 'a context twelve years ago, a re-write is needed'.

2nd TP Expanding the Object of DMP Activity: Broadening the scope of the DMP

As participants' learning was expanded via dual stimulation, they identified learners' needs as the object of their activity and now viewed the DMP as a tool. In doing so, the object of their work broadened out from a narrow focus on improvement of the DMP to consideration of how the authority meets learners' needs more broadly, and specifically, how complex needs are addressed. This shift in their thinking was located historically in terms of the move from segregation of children with educational needs to inclusion in mainstream schools (Allan, 2010; Norwich, 2008).

3rd TP: Expanding the Object of DMP Activity: Developing Capacity of Schools to be more inclusive

With continuing expansion of the object of DMP activity, participants recognized the need to develop the capacity of mainstream schools to support children with complex needs. Perceptions that some schools may be 'hugely resourceful' and inclusive whilst others appear to 'resist the spirit of inclusion' raised questions about how variable practice in schools could be accounted for. Variation in the quality of individual planning for children with complex needs was also discussed in this context emphasizing

the need for more robust quality assurance, challenging of practice and raising expectations of learners' achievements. A manager suggested that with the building of capacity in mainstream schools more children currently in specialist provisions could be supported in a mainstream context.

4th TP Expanding the Object of DMP Activity: Re-configuring Children's Services

Discussion about 'misplaced children' in special schools because the 'appropriate need is not being met' led to a debate about the lack of resources to support vulnerable families in their communities and lack of parental confidence in mainstream schools to meet complex needs. Together with ethnographic or 'mirror' data and conceptual models, case studies of children placed in specialist provisions represented first and second stimuli, the use of which enabled participants to identify and interpret contradictions in DMP activity. A case study of a 'misplaced' child turned discussion to transformational change required to meet learners and families' needs more effectively, focusing on the key principles of the *Getting it right for every child* (GIRFEC) national practice model to meet the needs of all children via improved partnership working and provision of services at the local level for children and families (Scottish Government, 2010).

An education manager called for 'radical' change whilst other participants referred to a need for 'roots and branches change', a 'clean sheet of paper', 'a re-think', a 're-visiting', a re-configuring of services', the 'need to rule-bend to support children who don't fit rules', and the need to develop a 'culture of co-creation instead of selling and telling to parents'.

Discussion

This section considers the DWR intervention in terms of theoretical and methodological rigour and practical relevance for professionals. See Table 6, 7 and 8.

Table 6: Theoretical and methodological rigour in DWR sessions

Epistemological 'threads' & principles: Zone of Proximal Development; Ascending from abstract to concrete; Dual stimulation; DMP as Unit of analysis; Contradictions; Agency; Historicity; Dialectics; Cycle of expansive learning					
Cycle of expansive learning		Ethnographic (Mirror) data	1st stimuli	2nd stimuli	Method of analysis
DWR Intervention Phase	1. Need state <i>(primary contradiction)</i> - questioning current practice recognising the need for change and commitment to development Session 1	<ul style="list-style-type: none"> Participant autobiographical accounts of DMP Internal reports/ review of DMP 	<ul style="list-style-type: none"> Identification of the problems described in mirror data about the DMP Participant views of the problems 	<ul style="list-style-type: none"> Individual activity system of DMP (participants) CHAT concepts and tools 	<ul style="list-style-type: none"> Thematic analysis of mirror data Analysis of DWR audio transcripts
	2. Historical and empirical analysis <i>(secondary contradictions)</i> - How past DMP has shaped the problems with present DMP Session 1 & 2	<ul style="list-style-type: none"> Participant autobiographical accounts National legislation Professional practice frameworks Institutional policy procedure Audit/evaluation data Case studies Video and transcripts of earlier DWR sessions Participant AS models 	<ul style="list-style-type: none"> Consider historical models of the DMP; and objects of DMP activity over time Which parts of the DMP system (roles, tools, rules) may be contributing to current problems Map model of current DMP as activity system with points of tension & conflict 	<ul style="list-style-type: none"> DWR group activity system model CHAT concepts and tools Cycle of expansive learning Manifestations & hypotheses of systemic contradictions (primary, secondary); conflict, double binds, disturbances & rupture, concepts (eg, boundary zones, relational expertise) 	Analysis of: <ul style="list-style-type: none"> Mirror data (Thematic) DWR audio transcripts Manifestations of systemic contradictions Expansive learning actions as qualitative turning points Participant agency
	3. Modelling/ Examining potential solutions/models how do we want to do things differently? what new tools and	<ul style="list-style-type: none"> Other DMP models GIRFEC national practice model Other DMP models GIRFEC national practice model/ 	<ul style="list-style-type: none"> Consider range of new models. Who will be involved; what will mediate/hinder 	<ul style="list-style-type: none"> Development of new tools and roles Activity systems of new models of DMP 	

	roles could be tried out? Session 2, 3 & 4	changes in wider system	implementati on? Impact on practice/peop le? • Table of actions/reco mmendations		
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Evidence is presented and discussed in the following four areas:

- Expansive learning
- Generativity
- Transformative agency
- Participants' critique of the DWR intervention

Evidence of expansive learning

Despite in-depth discussion and critique, the participants experienced initial difficulty finding the object/motive for their professional activity.

EO: so, I put DMP here as the object of our activity, as the focus of what we do as professionals, is that right?

HT: Yeah, that is why we come together in DMP meetings; it is what we do

EP2: but in a way, what we are doing is assessing need; is that not the focus of what we do?

This could have been because they were taking a narrow view of the object/motive of the DMP (Engeström & Sannino, 2018, 2010) and the phenomenon of object-tool reversal may have been present (Virkkunen et al., 2010). For example, the DMP, as a decision-making tool, was initially defined by participants as the object of activity rather than as a tool to make decisions about educational placement

for children with complex needs. Expansive learning was demonstrated in several ways as participants recognized the need for a shift in focus from decision-making about specialist placements to a more contextual, holistic view of meeting children's needs via staged intervention and support pathways that are better aligned with inclusive pedagogy and presumption to mainstream legislation (Florian, 2018; *Standards in Scotland's Schools etc. Act 2000*). This became the transformed or expanded object of activity for the participants. In this sense, they mastered the 'shifting tool-object relationship', acknowledged as a difficult problem in education (Virkkunen et al., 2010) with problem definition functioning as a mediating tool for interpretation and transformation of DMP activity (Sannino & Sutter, 2011).

The process of expansive learning during the intervention was neither linear nor structured. Analysis of session transcripts depicted an interactive process of digression, repetition, story-telling, and challenge between participants. Case studies involving child protection and Additional support needs (SEN) tribunals were used to challenge assumptions, win arguments and prove points of view. The participants experienced moments of revelation and discovery as they returned to topics and 'captured' their own turning points or expansive learning actions. Participant understanding of CHAT principles was evidenced in the description of the formative intervention as the DMP process being 'deconstructed' and that contradictions are the driving force for change in organizations, 'you reconstruct a new future' by 'surfacing all the tensions and problems that bubble under the surface'. Indeed, the CHAT notion of contradictions as a mechanism to expand and develop new ways of working was described as 'EPs agitating' and 'causing tensions that'll be magnified'.

EP 2: So what you are saying is...I just reckon in my work, DMP deconstructed

R: yes, in a way it is, yeah

EP2: and by that deconstruction

EO 1: You reconstruct

EP 2: you reconstruct a new future and so the activity theory is saying it is that deconstruction

EO 1: Looking at the problem

EP 1: which makes a different, a new future.

R: Yes, because you are surfacing all the tensions and problems that bubble under the surface

In this sense, the DWR formative intervention functioned as a mediational mechanism (Engeström, 2015) that opened up the ZPD or germ cell of DMP as participants developed a model of future practice (Sannino et al., 2016). The researcher mediated DWR activity in the form of dual stimulation as the participants considered the problems of the DMP (first stimuli) together with scientific concepts (CHAT) and models (activity systems) as second stimuli to expand their everyday understanding of DMP. In so doing, participants' thinking shifted from 'inductive generalizations' about DMP based on everyday work experiences to form systemic understandings or 'theoretical generalizations' based on a cultural-historical analysis of DMP activity (Virkkunen & Schaup, 2011, p.645).

Evidence of generativity: A new model as expansion of DMP.

Engeström (2009) considers expansive learning in DWR interventions with new forms of work practices or activity. By understanding the expansion of DMP activity as learning at the level of the activity system, it helped to conceptualise collective intent to improve service delivery for children and families (Blackler, 2009). Expansion of the object of the DMP focused upon the need to re-structure services for children and families within the GIRFEC framework. In turn, the development of a new model led to the creation of new tools (or instrumentalities) (Engeström, 2000) and a re-configured division of labour around professional roles. See Figure 8.

Engeström et al (2003) describe DWR interventions as 'marginal microcosms' of the interacting networks of activity systems in authentic contexts. Referring to the 'centripetal potential' of DWR interventions, it is suggested that the transformational and generative activity achieved in DWR sessions may make 'inroads and tends to spread into the central structures and interactional routines of the organization' (pp. 310-311). In this way, DWR methodology can account for mechanisms via

practitioners and stakeholders continue to engage with change processes once the DWR sessions have ended.

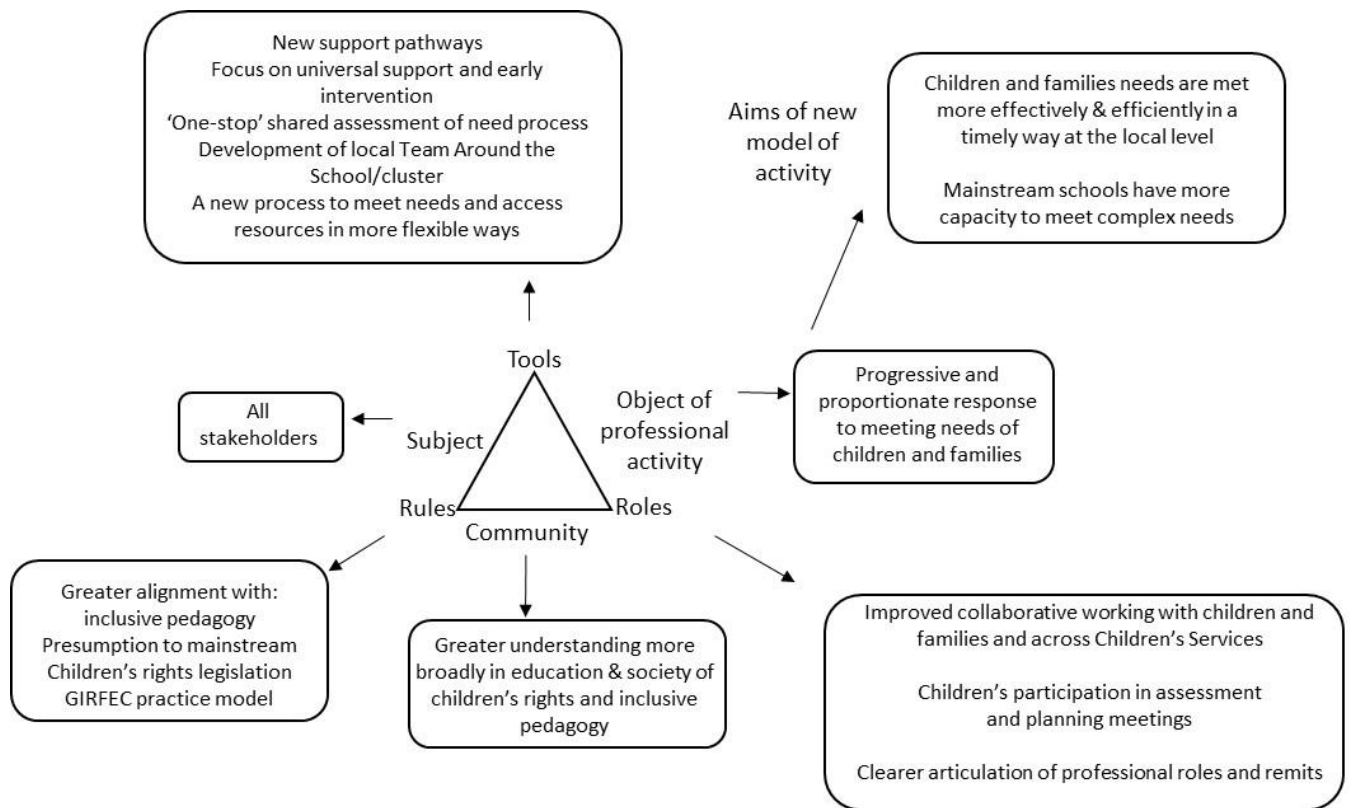


Figure 8: A new model of professional activity to meet needs

Participants highlighted the importance of developing the capacity of mainstream schools to support the needs of learners highlighted the need to implement the concept of ‘Team Around the School or Cluster’, a network of partner agencies providing local support to schools. The GIRFEC national practice model and the Scottish Curriculum for Excellence (Scottish Government, 2008) was viewed as a key mechanism in meeting the needs of all learners as was the need for quality individual education plans for children and young people with complex needs. They also agreed upon the need for improved definition and assessment methodology within an evidence-informed, staged intervention approach to support. Targeting resources at the local level within the universal services structure was emphasised as was a more appropriate and cost-effective way of addressing children’s needs.

Issues around workforce learning and development were raised and the need for on-going training and self-evaluation within and across partner agencies to develop the skills and knowledge base to meet children's needs within a holistic and coherent framework of service delivery and inter-professional practice. Effective partnership working may offer an enhanced form of personal agency in which people recognise each other's resources and agency to achieve a negotiated understanding of presenting problems when assessing children's needs (Edwards, 2015). Professionals can 'draw on distributed expertise but also must contribute to it' (Edwards & Kinti, 2010, p.41).

The notion of distributed expertise and relational agency explains the need to 'know how to know who' and working with others to expand a collective understanding of complexity (Edwards et al., 2009). Additional notions such as relational expertise deepens understanding of how knowledge is located across systems and drawn upon by professionals to support children and families (Edwards, 2017). Such concepts may enable managers to have deeper insight into the interconnectedness and complexity of public service working contexts (O'Flynn, 2007) and to provide a more nuanced, relational approach to public sector management and leadership (Han et al., 2016; Clark et al., 2014; Hoskings, 2011), otherwise, resistance to change may persist (Edwards, 2015).

Evidence of Transformative Agency

Participant agency and power to direct the research process and the outcomes of the intervention (Engeström, 2011) was evidenced in instances of participants taking the initiative during the sessions and gaining control of topics being discussed. They questioned, challenged, and resisted each other's contributions and those of the researcher. A key agentic deviation occurred in session 2, the focus of which was the expansion of participants' learning about DWR methodology as a formative intervention. See Table 7. It was provoked by the development and expansion of the object of DMP activity from a focus on the decision-making process for special school placement to an engagement with the development of inclusive practice to meet children's needs in mainstream settings. One participant

perceived this expansion of the object of DMP activity as an error in the research aim: focusing on the DMP process rather than on how to improve inclusive practice in mainstream schools. The researcher-practitioner responded to the challenge using CHAT and DWR concepts to explain how the research design, as a formative intervention, could 'accommodate this kind of shift' as the object of DMP activity was expanded.

Table 7: Participant's challenge and act of agency

Participant's challenge to the research design
<p>EO 1: <i>Think of what was outlined to you earlier is a challenge to you as a researcher in effect saying you're asking the wrong questions and this data all relates to the wrong question. Now some of it will tell us something useful about what we think is the right question... but can the constraints you're operating within accommodate this kind of shift?</i></p> <p>R: <i>It is designed exactly to do that. we've re-configured or expanded the object of DMP. In terms of activity theory, we engaged in this research activity to open up the ZPD of DMP, to challenge established, dominant practice and expand the object of work activity. That is what you have done. You have re-focused what the object of DMP activity should be. The research methodology is based on a formative intervention design which means that, you know, we were aiming to change and develop practice without prior knowledge of the direction we would go in. We did this based on analysis and discussion of ethnographic data of historical and current work activity, you know, parent views and education professional views. We have engaged in a process of co-construction and negotiation as participants and researchers. As a researcher, I didn't expect 'nicely linear results' and I didn't know what the solutions and outcomes would be before we started.</i></p>

In CHAT terms, this represented a 'significant deviating action' (Engeström, 2008, p.223) as participants' expressed 'resistance and subversion' in the research process (Sannino & Sutter, 2011, p. 565) via dual stimulation as the core mechanism to attain agency (Engeström, 2011). Transformative agency is a quality of expansive learning that requires a break away from the researcher's initial research design/plans. It involves taking the initiative and showing commitment to reconceptualise the original object of activity that leads to practical transformation. Participant agency can be considered as

‘expansive learning actions and deviations from instructional intentions’ of the researcher (Engeström, 2011, p. 612).

In terms of the researcher’s agency in the intervention, she facilitated the first DWR lab session as a starting point to set the process in motion, after which she yielded the usual researcher control in empirical research as the participants took more initiative to lead and shape the discussion. A dialectical and dialogic reading of this situation may be that the researcher and participants both shaped and were shaped by the DWR intervention via dialogue to bring about expansive learning (Clot, 2009). Dialectics, as a form of argumentation, enabled participants to engage with opposing ideas or contradictions in the DMP, expressed in dialogue or conversation, and resolved in discourse: thesis; antithesis, synthesis (Daniels, 2008; Roth & Lee, 2007). A dialogic approach in this study enabled several perspectives to be considered to achieve greater understanding and meaning (Wegerif, 2008). As such, conversational utterances (qualitative data in this study) exemplified expansion of collective understanding of participants’ experiences of the DMP and their thinking about it. Expansive learning thus required both dialectical argumentation and a dialogic perspective.

To participate in this, it is suggested that intervention researchers ‘may need to step out of their traditional role of observers and analysts only’ (Engeström et al., 2003, p. 310) ‘making themselves ‘contestable and fallible participants of the discourse’ (Engeström et al., 2003, p. 286). In turn, this makes ‘development visible’, enabling joint activity of ‘envisioning’ and ‘decision-making’ in organizations (Engeström & Kerosuo, 2007, p.307). Engeström (2008) refers to the process of change in researchers as well as the phenomena that they study:

‘In the social sciences, we study phenomena that change while we are studying them.

Being ourselves part of the phenomena we study, we researchers also change as our research objects change’ (p. xi)

Participants' critique of the DWR process

Participants discussed their views of the DWR intervention in the final session and then completed written evaluation proformas two weeks later. See Table 8. Their views on the implementation of the new model were also gathered a year after the intervention. These are presented in the second paper based on the original study. The intervention was considered a coherent, if time-consuming, approach to changes processes that provoked a different way of thinking about the DMP. Framing identified problems with the DMP as tensions was considered useful in working towards change. Participants focused upon the importance of collaborative working, negotiation of shared understanding, and authority to make changes

Table 8: Extracts of Participants' evaluation of the DWR intervention

Extracts of Participants' evaluation of the DWR intervention
EP1: It seemed to me to be extremely well thought out approach with clear, built-in systems for change.
EP2: the activity triangle and DWR process does get you off the treadmill and thinking. There have been action points that we can make happen outside and in the service that will change part of the system but a complete re-think might now be on the cards
HT1: The idea of looking at why and for who we are providing a service and all the underlying tensions was a good basis for working towards change. The model requires a lot of time but as change should be for a necessary purpose it is worthwhile spending the time debating it.
EO 1: For me the process has clearly highlighted the need for more collaborative working and discussions between mainstream and special schools, as the question 'why is this child still in mainstream?' is, I feel, asked too often by mainstream staff. It was interesting to hear the flip side of this- 'why is this child in special education?'
E0 2: There would have been no review of the DMP without these sessions. Many had concerns about the DMP and saw that a review was needed but outside psychological services nothing had happened. The sessions brought several key stakeholders together, including officers of sufficiently seniority, who could give us the authority to proceed.

HT 2: We arrived at the sessions with very different views about the DMP but we have managed to come to the same conclusions about what aspects of the process need to be changed. We have negotiated a shared understanding. We have agreed that the core process is good but needs developing.

EP 2: The outcomes of the research have exceeded my expectations. We now have a clear pathway to take things forward.

E0 2: The sessions enabled a thorough explanation of the DMP process.

Limitations of the study

Dialogic processes enable different views to be heard in constructive dialogue but always within contexts that have different meanings over time. At the conclusion of the intervention phase of the study, participants engaged in dialectic argumentation concerning the contradictions in the decision-making process. However, it is unclear if deep-rooted beliefs about inclusion and the processes to enable it changed in individual participants and it may be that the development in participants' thinking could have occurred had another approach been taken. Also, as the local authority context continued to change post-intervention, participants' views about the DMP may have continued to change. The DPM meant different things to different people at various points in time. Problems reframed and expanded upon in the intervention did not guarantee that new problems would not emerge. Rather, 'the resolution of one contradiction leads to another, to be dealt with in a new developmental phase (Toiviainen, 2009, p. 346). Processes to make our educational systems more inclusive may always be provisional, contextual, multi-voiced and open to new understandings (Wegerif, 2008). The implementation phase of the study, reported elsewhere, bore this out.

Although presentation of ethnographic data and case studies of the DMP process ensured that DWR participants took cognizance of a range stakeholders' perceptions of problems in the DMP process, many perspectives were not represented in the DWR workshops nor in the ethnographic data. For example, paediatricians, social workers and third sector professionals also participated in the assessment

of children and young people for whom applications were submitted to the DMP. However, it was beyond the scope of this study to include the views of non-education professionals although inclusion of their views might have influenced the DWR discussion.

Further research

Intervention research with a broader range of stakeholders would be useful to analyse and transform current practice thus initiating a new cycle of expansive learning. As per above limitation of the study, DWR methodology could provide a forum for widening the community of partnership working, with managers and leaders from social work, allied health colleagues such as occupational and speech and language therapists, and paediatricians in terms of the resources and tools that professionals use, how work is shared and the rules that both enable and constrain effective partnership working in a broader sense.

Martin (2008) suggests that an interesting development of activity theory would be the inclusion of parents and young people in the process of collective learning towards development of more responsive children's services. In doing so, they would be participating to some extent in co-configuration work with professionals (Education Scotland, 2019 a,b; Doran, 2012; Edwards et al., 2009; Engeström, 2008; Harris & Allen, 2011). Gathering data from children and families may be key to measuring the short, medium and long-term impact of CHAT-based intervention research on positive outcomes.

A focus on 'insider' CHAT-based research that can better theorize and conceptualise how people engage in collaborative work activity within and across complex educational systems may be worth pursuing further, especially for professionals such as educational psychologists who have a remit to engage in collaborative research in systems of which they are a part (Education Scotland, 2019c; Trowler, 2014; Daniels, 2008). The role of education professionals such as educational psychologists

in collaborative activity is under researched and a further CHAT analysis of this complexity has practical relevance for understanding the EP role in research and systemic change processes.

Conclusion

The aim of the paper was to provide insight into the actual learning of senior managers and leaders of children's services to lead organizational change processes using DWR intervention methodology. Reflections from the researcher and participants provide a response to the call to raise theoretical awareness of complex problems in the public sector (Head, 2019). However, the CHAT-based intervention not only helped educational managers 'to stand back and view the situation through a myriad of lenses' (dialogic thinking) but also enabled engagement in a dialectical change process that offered conceptual tools to critique *and* transform professional practice (Earl & Timperley, 2009, p.6).

Successful formative interventions must demonstrate evidence of expansive learning, transformative agency and generativity (Sannino et al., 2016). The summary of findings presented in this paper showed that a CHAT-based intervention can have both practical relevance and theoretical rigour in terms of historical analysis of contradictory professional practice providing a system-based understanding of complex work settings. The *centripetal potential* of expanded learning that occurred during the intervention is discussed in paper two regarding actual organizational change and observable impact on policy and practice.

Calls have been made for consideration of emancipatory issues of research (Robson & McCartan, 2016) with an emphasis on the primary contradiction in CHAT interventions between the use-value of professionals and the exchange value of the cost efficiency of reconfigured public services (Sannino & Engeström, 2018; Sannino & Engeström, 2018; Colville, 2012; Daniels et al., 2010). Gutierrez (2012, p.21) suggests that CHAT researchers should ask how current educational practice could be remediated and organized into new forms of education for the most vulnerable and disadvantaged children that 'befits a democracy'. Interventionist research with the most vulnerable may expand everyone's learning in more hopeful directions (Lemonie et al, 2021).

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