# National curriculum sub-levels: assessment practices as assemblage

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# National curriculum sub-levels: assessment practices as assemblage

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## Abstract

There is an established critique of the nature and role of assessment practices in mathematics education. This critique centres on the credibility of assessment, and the effects of practices on teachers and learners, including in relation to issues of social justice. This paper adds to these critical perspectives by examining some ways assessment practices come to happen in the way they do employing a sociomaterial analysis using the concept of assemblage. To exemplify the potential for this theoretical approach, I take as a focus National Curriculum Levels in England and in particular the emergence of 'sub levels' and their relationship to various actors, practices and discourses, particularly those concerned with differentiation and ability. I also point to how, even though National Curriculum Levels have been abolished ghosts of levels continue in spite of policy changes as assessment has not (yet) been reassembled.

## Introduction

There is an established critique of the nature and role of assessment practices in mathematics education and beyond. This critique centres on the credibility of assessment, and the effects of practices on teachers and learners, including in relation to issues of social justice (see for example, Cotton & Hardy, 2004; Morgan, 2014; Morgan, Tsatsaroni, & Lerman, 2002; Morgan & Watson, 2002; Pratt, 2016; Wiliam, 1996). This paper extends these critiques by developing a sociomaterial account to trace the emergence of National Curriculum sub-levels in English primary mathematics education.

When the English national curriculum was introduced in the early nineties a set of 10 attainment targets or levels were formulated for each school subject to describe attainment from school entry to 16 years old – the end of compulsory schooling. After 1997 and the introduction of the National Numeracy Strategy the use of sub-levels became widespread and apparently universal in primary schools. Sub-levels were formed by splitting each National Curriculum level was split it into 3 sub parts, labelled a, b, and c. This is described in more detail later in the paper.

The emergence of sub-levels raises a number of questions. There was no central policy decision taken to introduce them in the way in which the National Curriculum or National Numeracy Strategy were

introduced. Whilst they played an important role in schools' responses to the schools inspection regime, sub-levels had no formal role within The Office for Standards in Education (OFSTED) inspection frameworks. Yet in the social world of schools, sublevels appeared to be mandatory and externally required. Whilst sub-levels are embedded and 'make sense' where neo-liberalism and accountability discourses are dominant, these discourses and ideologies do not, in themselves and alone, explain how sub-levels and associated practices came to be. Here, I address these and related questions through a by considering assessment, including sub-levels through the lens of assemblage.

In addition to questioning how sub-levels came to be, my motivation for writing this paper comes also from a related interest. I am currently involved in the evaluation of a government policy initiative aimed at promoting in England the use of teaching approaches found in Shanghai. This evaluation raises the challenge of how, to theorise the relationship between policy and school practices. Further, one aspect of the Shanghai exchange project relates to the contrast between how primary pupils are grouped in Shanghai, where generally all pupils follow the same curriculum and are taught together and practices in that are common in England where often pupils are grouped by labelled and perceived ability - either being split into different classes (sets) or into small perceived ability groups within a class. Along with these grouping practices works is differentiated, that is different groups of pupils are routinely given different tasks to do. Both these grouping practices and differentiated tasks are enmeshed with the use of levels within the National Curriculum for more than twenty years. Ability grouping is associated with injustice and inequity (see Marks, 2014, 2014; Boylan and Povey, 2012; Boylan and Povey, 2013). Understanding more about levels and the beliefs and practices they are enmeshed with has the potential to give insight into how ability grouping practice are or are not influenced by the encounter with Shanghai practices and how grouping practice may more generally be disassembled.

The Shanghai exchange initiative is happening at the same time as the discontinuation of using levels in the new 2014 National Curriculum. Further, the new curriculum includes a statement that it is expected pupils will progress together. The policy change has resulted in activity within schools and more systemically about how to change policy and practice in 'life after levels'. The latter phrase having quickly entered meme like into educational discourse and is used in schools and also by including by a variety of consultancy and educational business seeing a significant marketing opportunity.

The world of 'life after levels' is a moment of a break down in what has been referred to as the process of punctualisation (Callon 1991; Law, 1992), that is akin the creation of a 'black box'. In this case a variety of practices are involved in the production of a level that is ascribed to a pupil. These practices are hidden within the notion of 'levelling'. Levelling comes to be central to assessment. When levels are removed there is moment where processes previously taken for granted and so hidden, potentially,

become more visible. If the removal of levels was only an issue of a change in periodic assessment and reporting then the consternation of how to cope with life after levels would be somewhat inexplicable, unless we understand that levels, through the use of sub levels and attendant artefacts and technologies pervade schooling practices in mathematics education.

The paper continues by providing a summary description of English primary mathematics education. Here, I draw on a number of research sources that are use different theoretical frameworks in their analysis. I then position the paper in relation to sociomaterial tools and in particular Actor Network Theory and also assemblage theory informed by Deleuze and Guattari's conceptualisation. Broadly speaking, I follow Fenwick's (2011) formulation of attempting an 'ANT-ish' account rather than actor network theory account.

This is then the basis for looking at some of the assemblage processes that lead to the ascription of a sub level and then to trace how sub levels came to arise and became pervasive within schools. I then consider in more depth the response to the removal of levels and suggest that we are seeing the formation of what in Deleuzian terms are ghostings in the system with life after levels being in at least some cases a continuation of very similar practices.

## Challenges of describing English primary mathematics education

Accurately describing English primary mathematics education is challenging. Whilst the practices are very familiar and taken for granted by those of us who are involved or whose work relates to primary mathematics in England, there is surprisingly limited research over the last 20 years that provides a detailed record of practices and few systematic studies, particularly those that include observation of teaching. In addition, teachers often over-report practices that are perceived as required or ‘good’ practice, for example interaction (Smith et al, 2004).

Further, the research that has been undertaken constructs its subject in particular ways and generally not from a sociomaterial perspective. This process of construction and its outcomes is connected to - the necessity of method assemblage: 'the argument is no longer that methods discover and depict realities, instead they participate in the enactment of those realities' (Law, 2005, p.45). Ways of discussing mathematics education in terms of curriculum, pedagogy, and assessment and sub categories of these is to participate in the enactment of those realities. That this is the usual way of talking about mathematics education does not mean that the depiction corresponds with a single reality.

One particular aspect of this is that my focus here is on assessment practices. Generally, accounts of assessment come after discussion of curricula and pedagogy. That makes intuitive sense, what is assessment if it is not assessment of curriculum learnt through pedagogy? It fits with a model of education in which different aspects can be linked linearly. Policy leads to curriculum leads to

pedagogy leads to assessment. Behind policy we might consider larger and wider social forces and currents as, for example, Pratt (2016) does in connecting teachers' assessment practices not only with policy structures but around and pervading this neo-liberalist ideology. The underlying ontology here hints at notions of context as containers (Nespor, 2002, Fenwick, 2011).

However, a key argument I make in this paper is that we should assume a perspective of symmetry in relation to productive power of different components of what I consider here as, a mathematics education assemblage. This happens in multiple ways. In the policy assemblage National Curriculum levels are not a way in which mathematical content is organised, by adopting a set of levels what mathematical content is described and how it is described is also produced. In the classroom the process of ascribing levels to children is generatively co-dependent with the enacted curriculum of the classroom. Thus assessment assembles curriculum and pedagogy as much as it flows from them.

## A short history of 30 years of English Primary Mathematics education

The education reform act of 1988 introduced the English national curriculum from 1990. A key part of the National Curriculum was the identification of 10 levels that charted an expectation of learning from school entry to the end of compulsory schooling in England at 16. Each school subject, including mathematics, had a set of statements of what a child was expected to be able to do or know at each of these levels, the attainment targets.

There national curriculum has been subject to various revisions and this has led to some changes in what content appeared at which level and more substantial changes to the way in which curriculum material is organised including a reduction, in mathematics, of the curriculum strands and a reduction to 8 levels with an additional level of exceptional performance (an amalgamation of the previous level 9 and 10). Amidst these changes, the use of levels remained until the introduction of the 2014 curriculum. The division into levels was critiqued from the outset, not least as problematic way to describe mathematics, as well as as the consequences in terms of deeply furrowed pathways for mathematical learners to follow (for example Dowling & Noss, 1990). The process of ‘levelling’ led to labelling and self-labelling of children (Reay a& Wiliam, 1999; Cotton and Hardy, 2004).

In 1997 the National Numeracy Strategy (NNS) was introduced. The NNS not only prescribed what was to be learnt but arguably how it was to be learnt with advocated 'direct' teaching methods promoted by numeracy consultants (DFEE 1999). The elements of “good direct teaching” were said to be directing, instructing, demonstrating, explaining and illustrating, questioning and discussing, consolidating, evaluating pupil’s responses, and summarising (DFEE 1998 page 11/12). Teaching should happen in hour long lessons to consist of three parts - a short starter activity (often modelled as involving mental arithmetic or skills practice), main activity and plenary. Although the NNS advocated interaction, in implementation, primary mathematics lessons in England have continued to

be marked by low levels of interaction between teacher and pupils, including during whole class episodes. For example, recommended lesson plenaries that can be an opportunity for interaction are not always used with one study finding they are only used in half of lessons (Sammons et al., 2005)

The format that has dominated is teacher explanation in a transmissive manner followed by individual practice or group practice (Smith et al., 2004; Miao & Reynolds, 2014, 2015). Lessons often focus on meeting discrete differentiated learning objectives (Miao & Reynolds, 2015) that are framed in observable behaviours or outcomes – for example the completion of particular tasks. Practice tends to be based on worksheets or other resources that focus on routine problems (Askew et al., 2010). A priority is placed on demonstrating maximum coverage of content within a lesson and, consequently, often material is retaught in subsequent years because arguable the depth of learning can be shallow – the focus being on demonstrating that objectives have been met.

These objectives, in turn, are linked to a process of individual, school and national targets. Although not mandatory, the NNS promoted when particular mathematical topics should be taught with week by week planning grid with two lessons per half terms to be used for assessment tasks. Along with the NNS, the national curriculum was revised and integrated with and into the NNS framework. There was an increased emphasis on number with 11 of 17 sub strands being focused on number, and number being mentioned or referred to in others (DFEE 1998, page 39). In keeping with this focus, mathematics lessons in primary schools were renamed numeracy with the definition of numeracy used in the National Numeracy Strategy is narrower than that used in 1959 (Noss, 1998).

There were two principal policy mechanisms for variously, propagating, encouraging, supporting and, indeed, enforcing teachers and schools to follow the National Numeracy Strategy approaches. Both of these are aspects of the centralisation of control (Woods and Simkins, 2014) that is one aspect, along with marketization that is part of an international tendency of neoliberalism in education (Ball, 2000, 2009). The first of these mechanisms is, a significant infrastructure of both local, regional and national consultants and advisors supported by and using substantial amount of training materials and guidance documents. The second is the role of the accountability regime used as levers to influence school level practices (Perryman, 2009; West, Mattei and Roberts 2011), particularly the use of assessment targets, school league tables and the inspection regime enacted by the Office for Standards in Education (OFSTED).

## Assessment practices

In this section, I consider assessment practices within English primary mathematics education by considering four aspects: the statutory assessment framework; teachers' assessment practices, the role of fixed ability thinking; and notions of differentiation.

Since the introduction of the National Curriculum some aspects of assessment policy in primary schools have stayed reasonably similar whilst others have changed. As well as the use of National Curriculum levels as discussed above, national tests in Year 6 at 11 years old (KS2 SATS) in mathematics and English have been the durable key measure of both pupil attainment and school quality (Whetton, 2009). Assessment of Key Stage 1 in Year 2 (at 7 years old) has changed with tests initially used then dropped after 2003 in favour of teacher assessment. Whilst primary schools ostensibly have autonomy over assessment in other year, in practice the OFSTED requirement to demonstrate progress means that there is a focus on year on year or within year 'progress'.

As described above, the National Curriculum is organised into levels or attainment targets. However, routinely for some time almost all primary schools have used a framework of sub levels to not only label children, but to group them, to plan lessons, to monitor teacher effectiveness and more beside. Schools have statutory reporting requirements at 7 and 11 years old.

What was a sub level? The National Curriculum level 4, the expected level of attainment at the end of primary schooling In England would be routinely divided into sub levels of 4a, 4b and 4c. There is no official or prescribed meaning of the sub level. Here is a typical description by a school written for parents:

> C the child has started to work at the level B working well within the level A the child has reached the top of the level and is working towards the next level Children are expected to work their way through one level every two years (e.g. a child working at level 2B in Year 2 would be expected to reach 3B in Year 4) - so progressing 1.5 sub levels every year. *However, children aren't robots and their rate of progress will vary from year to year. For* some children, achieving level 3 by the end of Year 6 is a real success. That particular individual may have started school below the national average level but has still achieved good progress throughout their primary school years. A child achieving level 5 at 11 years of age is working at a high level, and only one percent of children nationally achieve level 6 at primary school. High School students who pass GCSE at grade C have achieved level 7. (Staveley School, n.d.)

Pratt (2016) analyses how the twin tendencies, identified above, of centralised control and accountability enforced through OFSTED alongside quasi-marketisation (Ball and Youdell, 2008) play out in school assessment practices. He uses Bourdesian concepts to analyse the meaning of assessment and its outcomes for primary school teachers. He argues that the OFSTED accountability regime leads to an internal market in which pupils' achievements become a commodity and source of competition between teachers – thus pupils achievements become private goods.

Thinking about pupils and learning mathematics through the lens of 'ability', and specifically that ability is relatively fixed, is pervasive in English Primary schools (Marks, 2014). This manifests in, and is produced by, national practices, school practices and classroom practices. Examples of how fixed ability thinking shapes national practices were progress targets from Key Stage 1 to Key Stage 2. By basing targets on the prior assessment targets leads to differentiated access to the curriculum with progression being determined by progress through National Curriculum level (though how pupils actually progress varies a great deal from the assumed model - see Allan, J. 2014). School levels practices that accord with this are to set students different progression targets and then in accordance with these to give different resources and materials. Classroom practices are shaped by discourses of differentiation and the need to demonstrate that progress is planned for and can be observed - to OFSTED or to school leaders who enact quasi-OFSTED regulation on an ongoing basis in the school (Clapham, 2015). The most visible manifestation of this is the use of learning objects that are formulated in terms of 'all will', 'most will', 'some will'.

The logic of such differentiation supports and is supported by attainment grouping which is increasingly prevalent in English primary schools. In larger schools, this may involve setting pupils, or, more frequently, in class grouping where pupils who are perceived to have similar ability sit together (Hallam & Parsons, 2013). The ascription of National Curriculum levels is important to grouping practices regardless of whether ability grouping happens across classes or within classes, Marks (2014) identifies how educational triage plays out in primary mathematics classrooms with differentiated access to spaces, resources and qualified teachers (Marks, 2014). Perhaps even more pernicious is the way in which the constructed labels of ability shape what teachers accept as legitimate activity. The same type of behaviour and engagement in classroom practices can be received very differently depending on the ability label and be disregarded or punished if the pupil carries a label of 'low' ability or praised if seen as 'high' ability (Marks, 2013).

## The sociomaterial and assemblages

The research and analysis of assessment and related practices considered in the last section, offers important insights and understanding into these practices. Various analysis point in different ways to how assessment practices are shaped or more strongly express powerful and prevalent social forces and discourses (Marks, 2013, 2014; Morgan, Tsatsaroni, & Lerman, 2002; Pratt, 2016 ). Yet these have limitations in giving insight to the entanglement of such forces and discourses with the material in the production of assessment practices. If we ask the question: 'how and why did sub levels come to be and what are the relational effects of these phenomena?' then there is much still not known.

One way to address this is through an alternative, sociomaterial analysis that embraces ontological multiplicity and conceptualises these multiplicities through concepts such as networks, fluidity and assemblage and materiality (Fenwick, 2011; Law, 2004; Law & Singleton, 2014). Rather than seeking

to identify the underlying or key causal processes, a sociomaterial approach focuses on relational effects rather than the identification of ontologically distinct components. A way to conceptualise this is through the notion of 'assemblage'. This is most associated with the writing of Deleuze and Guattari (1987) as a philosophical perspective (De Landa 2006). However, here, I use assemblage in a more empirical manner (Müller, 2015) and alongside a sociomaterial sensibility associated with actor network theory (ANT) accounts (Laws, 2004). This 'sensibility' entails an analytical method that follows and traces the trajectories of parts of the assemblage and to explore their enmeshed (inter)relationships.

It is beyond the scope of this paper to explore similarities and difference between Deleuzian conceptions of 'assemblage' and that of 'actor network'. However, there is a kinship, as recognised by Latour –who suggested that 'actant-rhizome ontology' (echoing Deleuze and Guattari) as an alternative term to actor network (Latour, 1999). Such debates aside, there are three features of assemblages/actor networks that I highlight here as important to a sociomaterial account

**Heterogeneity**

Assemblages are heterogeneous they consist of different types of things– including people, materialities, processes, beliefs, ideas, and forces.

**Symmetry**

The process of assemblage is symmetrical in that all components are relational effects and all have generative capacity. Different sorts of things do not necessarily have more importance than other sorts of things in assemblage processes (though they may do). It is not known a priori or assumed that different types of components are more important than others in terms of generative power or within any type of component that some are more important than others So discourse or structure are not necessarily more important in processes of assemblage and in what assemblage do and are done to than other things such as artefacts (though they may be).

**Multiple logics**

There is not necessarily a single or dominate logic in assemblage processes. Indeed, it flows from the principles of heterogeneity and symmetry that there will often be more than one logic. An assemblage is not, in general, the unfolding of a single logic – even when one, in any moment, is dominant.

**Translation**

New formulations arise with new relationships that show both continuity and discontinuity.

## Inscribing a sub-levels and erasing the inscription process

To begin to 'de-punctualise' sub levels, in this section, I consider one example of how a sub level is produced or ascribed, in this case the derivation of a sub level as from an optional national test – the

Level 3 test (QCA, 2006). This was a test available and used during a particular period. Part of the argument of this paper that there is not a single process by which sub levels are produced, each moment of assemblage may be different. However, this visible and explicit practice makes visible the type of practice that occurs in other instances of the process of 'levelling'

Below is an extract from the teacher's guide for Year 3 optional tests (QCA, 2006).

Figure 1 Extract from Year 3 optional tests Teacher's guide

**Finding the level**

Test 3a provides level outcomes ranging from level 2B to level 3B.
Test 3b provides level outcomes ranging from level 3C to level 4C.

The level is calculated by adding up the marks gained from the mental mathematics test and the relevant written test, and reading across to a level in the usual way.

**Test 3a and mental mathematics test**

| Number of marks from Test 3a plus mental mathematics test | 0–10 | 11–18 | 19–29 | 30–37 | 38–50 |
|---|---|---|---|---|---|
| level | below level 2B | level 2B | level 2A | level 3C | level 3B |

**Test 3b and mental mathematics test**

| Number of marks from Test 3b plus mental mathematics test | 0–21 | 22–29 | 30–35 | 36–40 | 41–50 |
|---|---|---|---|---|---|
| level | below level 3C | level 3C | level 3B | level 3A | level 4C |

Somewhat confusingly it refers to two tests 3a and 3b – the 'a' and 'b' here are not related to sub levels but rather two versions of the same test. Within the guidance document no meaning is given of 3a, 3b, 3C and so on. This meaning of the sub-level is opaque and so there is space for translation by the users of the document.

It is beyond the scope of this paper, and space does not allow me to offer a full analysis of the test content and how this relates to the National Curriculum Level 3 descriptor. However, it is curious that on test 3b the content fits with National Curriculum level 3. More than 40% of the marks in order to be judged to be 'beginning working at level 3', 80% it is taken to mean working at level 4 even if there are no questions answered that fit with the level 4 description. Once the level is identified, however, it some inscribed and enmeshed in a variety of practices including the type of content that learners can access and how (some) teachers might routinely discuss learners - 'my 3cs' or 'the 4a table'.

In the 'finding the level' table above, there is no discussion of confidence intervals. The same guidance document there are sections that allow age standardised scores to be calculated. The age standardises scores provide a means to compare the test score or an individual child with peers who are the same age who have taken the test; a caution is given:

> Confidence Bands
> As the standardised scores in the tables are derived from one short test, some margin of error is inevitable, as is the case for all standardised tests. A margin of error does not mean pupils have *been assessed incorrectly. It is simply a statistical estimate…..In this case, the 90 per cent* confidence band is 7 so for example if a pupil has a standardised score of 105 in mathematics you can be 90 per cent certain that the tru*e score is between 98 and 112."* (QCA 2006, p.47)

But on the Level 3 tests the maximum mark is 50, so the confidence interval of 14 is 28% of the marks. Looking back at Figure 1, what then does this mean for someone who is assessed as Level 3B? Their minimum test score is 30 and so a 90% confidence is 23 to 37 or Level 3A to Level 3C

For a pupil who had scored 35 marks the confidence interval is 28 (Level 3A) to 42 (Level 4C). There are no pupils who are identified as Level 3B where there is not another possible sub level within the 90% confidence interval. The sub level t covers a wide range of different test scores and so it is a much fuzzier object then that which it appears in translation in policy, school and teacher discourses.

In spite of this, the claim made for the test and others produce for other year groups is that:

> *"This series can be used to track progression reliably not only between years, 3, 4, and 5 but also to link it confidently to the tests at the end of Key Stages 1 and 2"* (QCA 2006, p.5)

This is one assessment process. However, it is a national test, developed to be used for comparative purposes, it has been age standardised. If this level of unreliability or fuzziness is the case for this national optional test, then it suggests that school level assessment practices are similarly unreliable. This is supported by analysis of teacher assessment at the end of KS1 where comparison between infant schools (whose pupils leave at the end of KS1) and primary schools where pupils continue in the same school, suggests that different judgements are made (Allan, R., 2014). This is supported by the notion of the school internal market in which assessments are commodified (Pratt, 2016) and have an exchange value, so that the sub-level produced is not a reflection of children's' attainment let alone mythical ability, but is assembled in relation to many different forces, technologies and processes.

Marks (2014) identifies some of the ways in which the labelling process is self-perpetuating as the ability lens powerful shapes teacher interpretations of children's activity. Both informal assessments and summative written assessment are influenced by a variety of factors including many that are not directly related to or part of mathematical achievement (Morgan and Watson, 2002). All of this

suggests that teacher and school practices mean that the ascription of levels should also be 'unconfident', this belies though the way in which talk of levels and sub-levels was reified or punctualised (Law 1992).

Does this matter? In practice sub-levels were used to determine the work the access to the curriculum and resources (Marks, 2014). They shape teachers views of their children, OFSTED judgements on the school and importantly pupils' self-perception. There is only limited of research in primary schools about the consequences of labelling and related ability grouping on outcomes. However, in secondary schools a comparative study indicated that students with very similar test scores who were placed into different sets could have outcomes that average equivalent to have a GCSE grade. Thus, the ascription of sub-levels has material consequences for learners.

## Tracing the production of sub-levels

**Developing a narrative**

In this section, I focus on how sub levels came to be. Above I pointed to method assemblage and that the research process and telling of research stories is also a process of assemblage and evoked concepts of multiple realities (Law and Singleton, 2014) rather than there being a reality. This is particularly relevant here as the account I give is not a 'true' or accurate history; it is less a description of how things happened as much as some of the ways they happened or could have happened. There are at least two reasons why the story of sub-levels is not one that can be told with certainty. The first is that the historical record is fragmented and perspectival. We do know that when the National Curriculum was first introduced there were no sub-levels. We know that prior to the curriculum change in 2014 the use of sub levels in primary schools had become pervasive and, as discussed below, so embedded that as schools adapt to life beyond levels' many continue practices that look very much like levels. The process from one to the other is opaque. This itself is important to note - sub levels did not become widespread as the result of a policy or prescription. The process was messier than that.

The second stems from the philosophical view outlined earlier. If we consider the question of 'how did sub levels arise?' We can think of sub-levels as an assemblage, enmeshed with the assessment assemblage enmeshed with primary education assemblage and so on. This means that we are not likely to find an original cause or genesis moment but multiple causes or multiple logics and many moments of origin. Moreover, the processes of assemblage happen in and through multiple further assemblages: what happens in a particular school or area maybe different to another and different again to the system wide If an effective mapping of sub-levels' history is rhizomic (Deleuze and Guattari, 1988) then the textual form, such as this paper, in which ideas are considered in an ordered sequence places severe constraints on representing this: what may be placed first or last may suggest

an order of importance. Bearing these cautions in mind the following text assemblage attempts to trace some of the actors and association between them.

**Assembling sub levels**

Discourses of progress are embedded in OFSTED inspection frameworks, demonstrating progress in a lesson, meeting school and pupil progress targets. The national expected outcome by the end of Key Stage 2 is Level 4. So during Key stage 2 (7 years to 11 years) there is an expected progress from Level 2 to 4 across 4 years. OFSTED requires that schools are able to monitor progress but children are not expected to progress a full level in a year. The power of OFSTED is rooted in performativity cultures in turn embedded in discourses of accountability and school competition for status, pupils, teachers, and for some schools, survival through league tables.

The NNS and OFSTED both promote the use of learning objectives in individual lessons and 'good practice' supposes these should be differentiated. Combined with fixed ability thinking a perceived need arises to distinguish between different groups of learners who may be working at the same National Curriculum attainment target.

Level 2 was set as the expectation for end of Key Stage 1 assessment. Following the logic of being able to compare and classify schools and children, and that the majority achieve level 2, in early KS1 assessment level 2, but level 2 alone is split into sub levels 2a, 2b and 2c . In the late nineties some schools have begun to extend sub-levels into other Levels. In 2003 the QCA published optional yearly assessment tests of the type discussed above. As described above, the tests had means of translating tests scores into sub levels.

Consultants in a number of local authorities in parallel begin to develop frameworks to support processes of determining sub levels but moreover to use the concept of a sub-level as means to inform planning:

> Use the sub level statements when you are planning a lesson. This will make it easier to know at what level a child is working, and give you some indication of what they need to learn / consolidate in order to move to the next sub level. (Recording Sub level progress, LA planning document. 2005)

In local authority documents this meant that the curriculum content associated with a level was split into different parts.

Figure 2 Extract from 'Recording Sub level progress, LA planning document, 2005'

**Numbers and the number system**

| 2B | 2A |
|---|---|
| Pupils read and write and order accurately whole numbers to at least 50. They can count on or back in ones or tens, starting from any two-digit number. They can identify doubles and halves using numbers up to 20 and are beginning to understand the concept *of 'a quarter'. They recognise odd and even numbers to* about 50. | Pupils accurately count, read, write and order whole numbers to at least 100 and understand the place value of each digit.<br><br>They can describe and extend simple number sequences including odd / even numbers. |

Coupled to differentiation and ability discourses, learners access different curricula depending on their perceived level. These LA planning documents spread across Local Authorities and schools.

Independent Educational consultants and businesses calculate sub levels based on national test scores. For example an independent educational charity - the Fisher Family Trust provides data analysis services to schools and Local Authorities and uses this approach.

The government introduced a national school performance service called RaiseOnline. Although sub levels are not part of the inspection framework, RaiseOneline carries the OFSTED brand. Sub levels are calculated from National Curriculum tests.

Figure 3 RaiseOnline KS2 2014 sub level thresholds

| SUBJECT | Sub-Level | Lower Bound | Higher Bound |
|---|---|---|---|
| Mathematics | 3C | 18 | 27 |
| Mathematics | 3B | 28 | 36 |
| Mathematics | 3A | 37 | 45 |
| Mathematics | 4C | 46 | 56 |
| Mathematics | 4B | 57 | 67 |
| Mathematics | 4A | 68 | 78 |
| Mathematics | 5C | 79 | 86 |

**Assemblage processes**

In the above narrative multiple logics are present. The emergence of sub levels is intimately bound to the accountability regime, yet is not in a simple or straight forward way only a product of it.

Accountability processes themselves are, like sub levels, shaped by long standing discourses of ability that have been pervasive in formal English education from its moments. Various tools and artefacts - tests, test guidance, LA planning documents - online dashboard platforms that generate and translate sub-levels are central. Other actors are teachers, school leaders, inspectors, and educational businesses that variously enrol others or are enrolled in the sub-level assemblage.

## Reassemblage or policy ghosts?

In 2014, the National Curriculum was revised and the use of levels was removed. There is not the space here to interrogate or critique the nature of the new national curriculum in its entirety but rather I focus on how progression is formulated within the curriculum and translations of this.

The alternative to levels adopted in the Primary Curriculum was to identify age related expectations. Note that gone is a focus on age standardised tests produced at the turn of the century; the expected standard is the same if born in the school calendar year even though there are 364 days difference in ages between the youngest and oldest in the cohorts. For Key stage 1, teacher assessments require assessment in terms of working below, working at or working above age expected standard.

At the same time school leaders and teachers continue to 'need' to demonstrate that they are monitoring progress. This need is now reified and absorbed into leader and teacher identities. The school leaders need to monitor progress to meet OFSTED requirements but they perhaps also need to do this as part of their identity. They need also to monitor teachers. Into the space created by the removal of levels come consultants, educational service business, networks of schools, conferences amongst others developing alternatives. I take as an example the Sheffield Assessment Scale, a locally developed initiative though connected to a national body representing headteachers particularly those in the primary phase. The Sheffield Assessment Scale has now become a commercial offer requiring subscription to access and so the description below is based on an available draft version,

The Sheffield Assessment Scale (Betts, 2013) considers the age related expectation for each year and then divides each into five categories. Below is the table for Year 1 and 2. The scale in the right column starts at 19 – the 19 points preceding it being part of the Early Years Foundation Stage. Following Year 2 the scale continues through Year 6 and into the first points of Year 7 (presumably to allow for assessment at beyond age related expectations).

Figure 4 Sheffield Assessment Scale Year 1 and Year 2

| **Year 1** | | **Year 2** | |
|---|---|---|---|
| Accessing | 19 | Accessing | 25 |
| Developing | 20 | Developing | 26 |
| Consolidating | 21 | Consolidating | 27 |
| Refining | 22 | Refining | 28 |
| Secure | 23 | Secure | 29 |
| Established | 24 | Established | 30 |

The logic of progression is maintained by the development of a progression scale, thus:

> "Limited Progress … 5 or less learning steps
>
> Typical Progress … 6 learning steps
>
> Rapid Progress … 7 or more learning steps"
>
> This equates to two steps per term (one per half term) being typical progress.
>
> Typical progress would move the 'typical child' from being 'Y1 Established' to 'Y2 Established' in a year, and so on" (Betts, 2013).

A similar to critique can be made here as to that made above about the meaning of sub levels in relation to the content of the level descriptor. What is being accessed or developed in the descriptors? The whole of the age related curriculum content or some part of it? Presumably, to arrive at being able to 'consolidate' the whole curriculum would need to have been studied. This implies perhaps a curriculum in which all content is taught and then retaught. Whether this will be aligned or indeed shape what is learnt and when or whether this progression scale will exist in parallel is something that cannot be easily predicted.

Alongside the reconstruction of the progression discourse from levels to age expectations and in accord with it the new primary mathematics curriculum proposes that pupils should move through the curriculum together. This, alongside interest in South East Asian mastery approaches, has led to an interest in all attainment teaching in some schools and thus a move away from grouping by levels within classes or between classes. Yet here the logic of differentiation and fixed ability thinking

continues. The following quote is from an interview with a teacher from a school that had recently introduced all attainment (mixed-ability) teaching as part of enacting a 'mastery' pedagogy. The school has restructured the timetabling to have two mathematics lessons (or alternatively this can be seen as a single lesson split by an assembly).

> *We use a bronze/silver/gold system of difficulty. So, if a child sees an 'S' in their book, it means they're moving on to the silver activity and they have achieved a task. If they see 'SDI'* for same-day intervention*, they know they're working with me. So after assembly is finished,* the children return to class, their books are open in front of them, they look in their book and *they know whether or not they're working independently or with adult support. After that* assembly, from 10.15 until 10.45, we have 30 minutes of same-day intervention. That includes teacher input or teaching assistant input, depending on what the misconceptions have been. It includes consolidation tasks, deeper thinking tasks and also a whole-class self-assessment at the end where children indicate to me in terms of their confidence how they are feeling about *the learning objective we've just covered*

Tasks are divided into bronze, silver and gold. All students begin by undertaking the bronze task. This task acts as a daily point of triage (Marks, 2014). Those students who have not succeeded with the bronze task experience additional teaching in small groups. Silver tasks are 'consolidation' tasks, and gold 'deeper thinking' tasks. So the logic of 'all, most, some' continues.

A similar approach which preserves tripartite differentiation, reported by a different primary teacher is that pupils now sit on all attainment tables, but work individually on red, blue, or green activities which are of varying degrees of difficulty. This is described as mixed ability teaching although children are doing different tasks though now sat on the same table.

Although the policy imperative is to embrace 'life after levels', in practice the assessment assemblage the totality of relational effects means that what may be reproduced is something that has the same logic of levels. A spatial metaphor might be that a piece of a jigsaw is removed – the levels – but the pieces that surround the missing piece are largely the same and so the piece that is introduced as a replacement represents the same or similar logics. This might be seen as the ghosts of levels (Allan and Youdell, 2014; Deleuze, 1990) – levels, although 'chased away', come close again.

## Conclusion

In this paper I have adopted a sociomaterial perspective to analyse the production processes of national curriculum sub-levels. Assessment process and practices are complex assemblages with multiple logics. Recognising this provides insight into why policy change to remove levels will not remove either levels thinking or perhaps more importantly levelling practices. Indeed, it is apparent that the new curriculum policy is being translated in ways that mean that assessment assemblages can

be adapted but not reassembled. It is clear then that assessment practices are not primarily a consequence of policy but rather policy and materialities that flow from policy are part of an assemblage process.

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