Progression in Creativity: Developing new forms of assessment

Final Research Report

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Executive Summary

Introduction

In Spring 2011, Creativity, Culture and Education (CCE) commissioned the Centre for Real-World Learning (CRL) at The University of Winchester to undertake research to establish the viability of creating an assessment framework for tracking the development of young people's creativity in schools. The research and subsequent development work with teachers was a 'proof of concept' activity. Three overarching questions guided this research:

1. Is it possible to create an assessment instrument that teachers find useful (the proof of concept)?
2. Would any framework be useable across the entire age span of formal education?
3. If a framework is to be useful to teachers and pupils, what approach to assessment should it adopt?

After reviewing the literature on creativity and its assessment, and consulting expert practitioners, CRL created a framework for developing creativity in schools, and derived an assessment tool to trial in schools. Through two separate field trials our research suggested that the framework was sufficiently distinct from existing approaches to creativity to be useful and that from a teacher point of view, the framework was both rigorous *and* plausible.

Our principal findings were that:

1. The concept of an assessment framework for creativity in schools is valid and relevant. There was a strong sense among teachers that our framework encompassed a learnable set of dispositions. There are

strong grounds for now seeking to develop a more sophisticated prototype, of use to teachers and learners, to track the development of creativity in schools.

2. The framework should initially focus on the 5-14 age range, although some practitioners may find it useful with younger and older pupils.
3. Our evidence suggests that the primary use of any assessment framework will be formative, supporting pupils to harness more of their creativity and helping teachers more effectively to cultivate creative dispositions in the young people they teach.

In the process of validation with experts, creative practitioners and teachers, a number of other important issues were raised. Most notable of these was a strong sense of reluctance by teachers to make summative judgments about the level of creativity in their pupils, and we found no appetite among teachers for a paper-and-pencil, summative creativity instrument in schools. Measuring creativity, for teachers, would appear to be a fundamentally different task from measuring literacy or even assessing performance in the creative arts. We address this and other issues in this report.

Brief

Research and development work for this project ran from the summer term of the academic year 2010/11 and culminated in a final analysis of data in the spring term of 2011/12. **Section 1** introduces the research project. The key purpose of this work was to explore the viability of a tool or framework for the assessment of creative learning in school age learners. It was to test a model derived from key literature within a number of Creative Partnerships schools and broader literature and study.

The need for this project arose because no single model or approach to assessing creativity has ever been able to assert itself within educational settings, which

suggests some deep rooted challenges to overcome. The question arose of whether there is in fact a contradiction between the development of creativity in young people and the way schools are currently configured. With their focus on age related exams, large class sizes and non-individualised projects it often seems difficult to see how schools might be able to sustain a credible focus on the development of creativity, while conforming simultaneously to other mandatory modes of assessment which value different forms of learning and knowledge from those that might be described as 'creative'.

The study fulfilled CCE's objectives in that it:

1. Surveyed the literature around the issue of creativity and its assessment, including some of the practice focused documents developed out of the Creative Partnerships programme;
2. Developed a draft framework based on analysis of 1) above to test the viability of a progression model within a small group of Creative Partnerships schools;
3. Tested and further developed this framework within the context of a larger number of Creative Partnerships and other schools with a view to developing a **practical and teacher-friendly** framework for use in assessing this aspect of learning amongst pupils.

Development work involved a series of interventions designed to collect the necessary data in order to situate this study within current research and practice of creativity and its assessment. This report brings together the five phases of work involved (literature review; garnering user perspectives; conceptual development; and two field trials), summarising findings from each in order to draw wider conclusions from the project.

An initial literature review informed the direction for the project, grounding it in research. To ground the project in best practice, consultation with head teachers and senior practitioners informed the development of the assessment tool. Collaboration with CCE further informed the conceptual development of the tool.

An initial Field Trial (FT1) was developed to establish proof of concept for the assessment framework and its practical application in schools. At this stage, evidence suggested that further trialling might narrow the age range to remove Early Years Foundation Stage (EYFS) and Key Stage 4. For a variety of reasons it was not practical to use such an assessment tool with these age groups. In the Early Years there is a strong tradition of this kind of formative assessment already. Our framework would be competing for teachers' time with the EYFS framework. In GCSE and 'A'-Level years, practitioners believed that 'noise' from the formal examination system precluded the possibility of adopting such an assessment tool, at least in the current curriculum climate. The steering group advised that EYFS should be maintained for a second field trial (FT2), however, because of the rich experience of practitioners in noticing creativity in this age group. Having determined that further development would be fruitful, FT2 was undertaken.

Literature review

Section 2 outlines the key implications from the literature review. From the literature, it was seen that creativity is a multi-faceted concept, which makes a universal definition neither possible nor appropriate. Broadly useful definitions tend to point to a set of characteristics of the creative process: it is imaginative, purposeful, and its outcomes are original and valuable. It is comparable to intelligence in a number of ways, but certainly in the sense that it is accessible to all, and can be developed. It can be viewed both as a general- and domain-specific concept. Flowing from the project aims and literature review, development of an assessment tool will concentrate on evidencing learners'

creative dispositions with a view to providing formative assessment, at least initially.

User perspectives

Section 3 details how user perspectives were taken into account throughout the project, but particularly in the early stages of conceptual development. As a prospective legacy for CCE, the concept of a tool for assessing progression in creativity received wide support from practitioners. This enthusiasm alone justified pursuing a first field trial which, in turn, led to development of a second trial.

The tool was developed through a collaborative, inquiry-led approach in order to ensure that the project benefited from the experience of practitioners. Two key stages of the input came from expert practitioners. Supporting the literature review, user perspectives suggested that development of an assessment tool should concentrate on evidencing learnable creative dispositions in individuals. They further suggested that clear communication of the purpose of the tool – to teachers and pupils – would be necessary to ensure it is used beneficially in classrooms.

Conceptual development

Section 4 gives details of the conceptual development undertaken between CRL's research team and CCE. Based on earlier work, the team spent time together to discuss the tool's conception. Specific dispositions were chosen because of their fit with the literature, and the clear distinction between the constructs – an area that many assessment tools had failed to do sufficiently.

Based on feedback from users (via appreciative inquiry and interviews), as well as from the literature review, it became clear that a tool for teachers to trial

should fit a number of criteria. These were agreed upon at the conceptual development stage. It should be:

- useful to teachers;
- useful to teachers who are interested in the 'grow-ability' of creative mindedness;
- at the right 'grain' of analysis; not too abstract, not too unwieldy
- clear and accessible in its use of terminology;
- clear in its use of adjectives for broad 'traits', and verbal nouns words for its sub-habits;
- applicable to a broad range of real-world types of creativity;
- consistent with previous published research on creative traits;
- as comprehensive as possible; and
- coherent internally, with distinct elements

Field trials

Section 5 reports design, method, and analysis of FT1, detailing how its findings led to recommendations for further development. The purpose of FT1 was to road test an approach to assessment of creativity in order to establish proof of concept for the assessment's framework and methods of application. It also aimed to determine whether it was worth pursuing further development work through a second field trial.

Groups of teachers from six schools were involved in FT1. Each group trialled a tool for the assessment of creativity over the second part of the summer term 2010/11. Teacher representatives from five of the six schools attended a 'train the trainer' session in London. These teachers took the tool back to their schools and shared it with their colleagues. The headteacher of a sixth school did not

take part in the development of the tool, but participated in two telephone conference calls and shared the tool with his colleagues. At this school, pupils were involved in trialling the tool also. The pilot did not otherwise make provision for exploring the role of the learner in using the tool.

Teachers reported back on how successfully they had been able to assess pupils at a moment in time using the tool. Teachers were asked to focus on six to 12 pupils only in the years we specified, and to attempt to map each child's profile for one habit at a single moment in time across three dimensions 'strength', 'breadth', and 'depth'. Strength was seen in the level of independence demonstrated by pupils in terms of their need for teacher prompts or scaffolding, or congenial conditions. Breadth was seen in the tendency of pupils to exercise creative dispositions in new contexts, or in a new domain. Depth was seen in the level of sophistication of disposition application and the extent to which application of dispositions was appropriate to the occasion. Teachers were asked to tell us what worked and what didn't in trying to perform this exercise. As a result of this field trial, a number of findings emerged:

- The particular multifaceted conception of creativity behind the tool, shown in its five 'habits' was seen as sufficiently inclusive by teachers.
- The division of each of the five 'habits' into three 'sub-habits' led to an assessment task that proved too onerous for teachers.
- Teachers were able to situate individual pupils on a tool that gauged the extent to which pupils had developed each habit.
- The tool's approach to progression as three dimensions 'strength', 'breadth', and 'depth' was found to be an interesting one. In practice, however, the assessment task it generated was felt to be too burdensome and complex.
- Teachers had different views on the most useful way to represent the framework visually. A circle format and a grid format were offered for

them to trial. Some preferred the circle, and others the grid. Teachers adapted the circle and the grid, with varying degrees of success. Both were adapted by some teachers to create more space for annotation, for example, but important aspects of the tool (strength, breadth, and depth) were omitted in one school.

- Some of the tool's language needed to be made more user-friendly.
- Despite the desirability of tracking and developing creativity, Key Stage 4 is an impractical target group for a non-statutory framework.

Our experience of FT1 led us to pursue a second field trial. It was clear that it was worth involving teachers in a second field trial, which may also provide an opportunity to gauge the response of pupils to a refined assessment tool. The assessment tool itself had a number of requirements that FT1 was designed to trial. Findings from FT1 demonstrated that the tool:

- Had considerable potential to be useful to teachers.
- Needed to take a lower grain of detail. As it stood it was too unwieldy for teachers to carry out assessment.
- Needed its vocabulary to be more immediately self-explanatory.
- Was clear in its use of adjectives for broad 'traits', and verbal nouns (e.g. 'questioning') words for its sub-habits.
- Was applicable to a broad range of real-world types of creativity (it was trialled by teachers from a range of subject areas).
- Was comprehensive (no missing habits or sub-habits were identified).
- Was internally coherent, with distinct elements (no overlap was identified).

Section 6 reports how FT2 was designed, implemented, and analysed. Findings from FT1 led to a range of implications for further development. These reflected

a modified approach that was deemed to be most fruitful in producing an early prototype assessment tool.

Twelve schools participated in FT2 to completion, over the second part of the autumn term 2011/12. Each FT2 school trialled an adapted version of the tool. FT2's tool was a step away from the rigid categories of FT1, providing space rather than structure. It required input and judgment from pupils, rather than being teacher-led. FT2 aimed to understand whether this tool was a practically useful one that both teachers and pupils could understand and use. It focused on 'being imaginative', as one of the five dispositions of the creative individual, and its objectives were:

1. To find out how teachers implemented the assessment project in practice, and what 'worked'.
2. To find out how the tool helped pupils to develop their imagination.
3. To find out how the act of facilitating pupils to use the tool changed teachers' practice.
4. To ascertain the extent to which pupils perceive they are able to self-assess 'imagination', providing sufficient supporting evidence.
5. To ascertain whether a consolidated approach to the dimensions 'strength' and 'depth' is sufficiently sharp to capture both aspects.
6. To ascertain whether a consolidated approach to imagination's sub-habits captures all three aspects (the division of each of the five 'habits' into three 'sub-habits' led to an assessment task that proved too onerous for teachers in FT1).
7. To ascertain whether 'breadth' is captured by pupils giving sufficient examples from outside the subject area in which the tool was completed.
8. To learn how the tool could be developed.

FT2 was seen to support the use of a tool that developed pupils' understanding of what it meant to be imaginative. Positive feedback regarding the impact on pupils' understanding and development of creativity, and on teacher professional practice, led us to conclude that further development of the tool would be of value to schools. Some of the issues remaining include:

- Incentivisation
- Integration within school reporting and reward systems
- Opportunities for technology
- Developing common understanding of key terms
- The role of moderation.

Conclusions and recommendations

As a result of FT2 we obtained clear findings about how the tool could be further developed and improved, and these form the major part of our overall recommendations. With further development work, the tool and its accompanying guidance could be utilised effectively by a broader audience. This study was conducted with support and participation from teachers predominantly receptive to the idea of assessing creativity. It is likely that their counterparts in schools less positive about the importance of developing creativity, or less familiar with the notion of assessing creativity, may be less receptive and even hostile to the idea. The next iteration of any assessment framework will have to ask an important question: given the non-statutory nature of much of this work, will it be most useful for further development to focus on those teachers and schools who are specifically interested in creativity, or could it have a wider use?

Section 7 brings together the conclusions and recommendations of the project, highlighting directions for further development. As a result of this work, it is our

firmly held belief that the refining of a formative assessment tool to assist pupils in the pursuit of 'growing' their creativity could be of great value. The next step would seem to be the development of a more sophisticated prototype. While this study demonstrated effectively a 'proof of concept', for the tool to be formatively useful across the age ranges, there is more research to be done concerning effective styles of moderation and of the development of more effective criteria to chart progression.

Our evidence-informed recommendations focused on:

- Maintaining the emphasis on the learnability of creativity;
- Development of training materials and 'best practice' resources for teachers;
- Incorporating the tool into schools' reporting systems;
- Separation of the sub-habits back into three distinct sub-habits;
- Scrutinising language and selecting a clearly legible printed font;
- Developing best practice;
- Developing a more formative tool to point pupils to areas for development;
- Capturing 'breadth' more systematically in the tool;
- Developing a more systematic evidence collection process;
- Developing the tool for the virtual environment; and
- Trialling the tool with the 'unconverted'.

1 Introduction

1.1 Brief

CCE is a national organisation that aims to transform the lives of children and families by harnessing the potential of creative learning and cultural opportunity to enhance their aspirations, achievements and skills. Its vision is for children's creativity to be encouraged and nurtured in and out of school and for all children to experience and access the diverse range of cultural activity in England because these opportunities can dramatically improve their life chances.

CRL is based at the University of Winchester. It carries out research, knowledge-exchange and consultancy relating to the development of learning dispositions that help competence to grow. An understanding that these learning dispositions are 'growable' is at the centre of its mission and it draws from the emerging science of learnable intelligence. Recently CRL has created The Expansive Education Network, a broad alliance of universities and educational organisations designed to support teachers learn how to research into these issues more effectively.

CRL was commissioned by CCE to explore the viability of a tool or framework for the assessment of creative learning in school age learners by testing a model derived from key literature within a number of Creative Partnerships schools and broader literature and study.

The need for this project arose because no single model or approach to assessing creativity has ever been able to assert itself within educational settings, which suggests some deep rooted challenges to overcome. The question arose of whether there is in fact a contradiction between the development of creativity in young people and the way schools are currently configured. With their focus on

age related exams, large class sizes and non-individualised projects it often seems difficult to see how schools might be able to sustain a credible focus on the development of creativity, while conforming simultaneously to other mandatory modes of assessment which value different forms of learning and knowledge than those that might be described as 'creative'.

The project required a study that:

1. Surveyed the literature around this issue, including some of the practice focused documents developed out of the Creative Partnerships programme;
2. Developed a draft framework based on analysis of 1. above to test the viability of a progression model within a small group of Creative Partnerships schools;
3. Tested and further **developed** this framework within the context of a larger number of Creative Partnerships schools with a view to developing a **practical and teacher-friendly** framework for use in assessing this aspect of learning amongst pupils.

The project was, thus, an exploratory 'proof of concept' study, whose direction would depend upon findings at each stage, and may or may not culminate in a useful progression model. If a stage did not support further refining of the progression model, project findings would reflect this, rather than attempting to work against the evidence.

As a potential legacy for CCE it is of great significance, however, that even in this frenetic and shifting policy domain there seems to be an appetite among educators for creating and using such a tool, both to value and to help pupils to develop their creativity.

1.2 Method

The following framework maps out the four stages of the project. Each stage is outlined below.

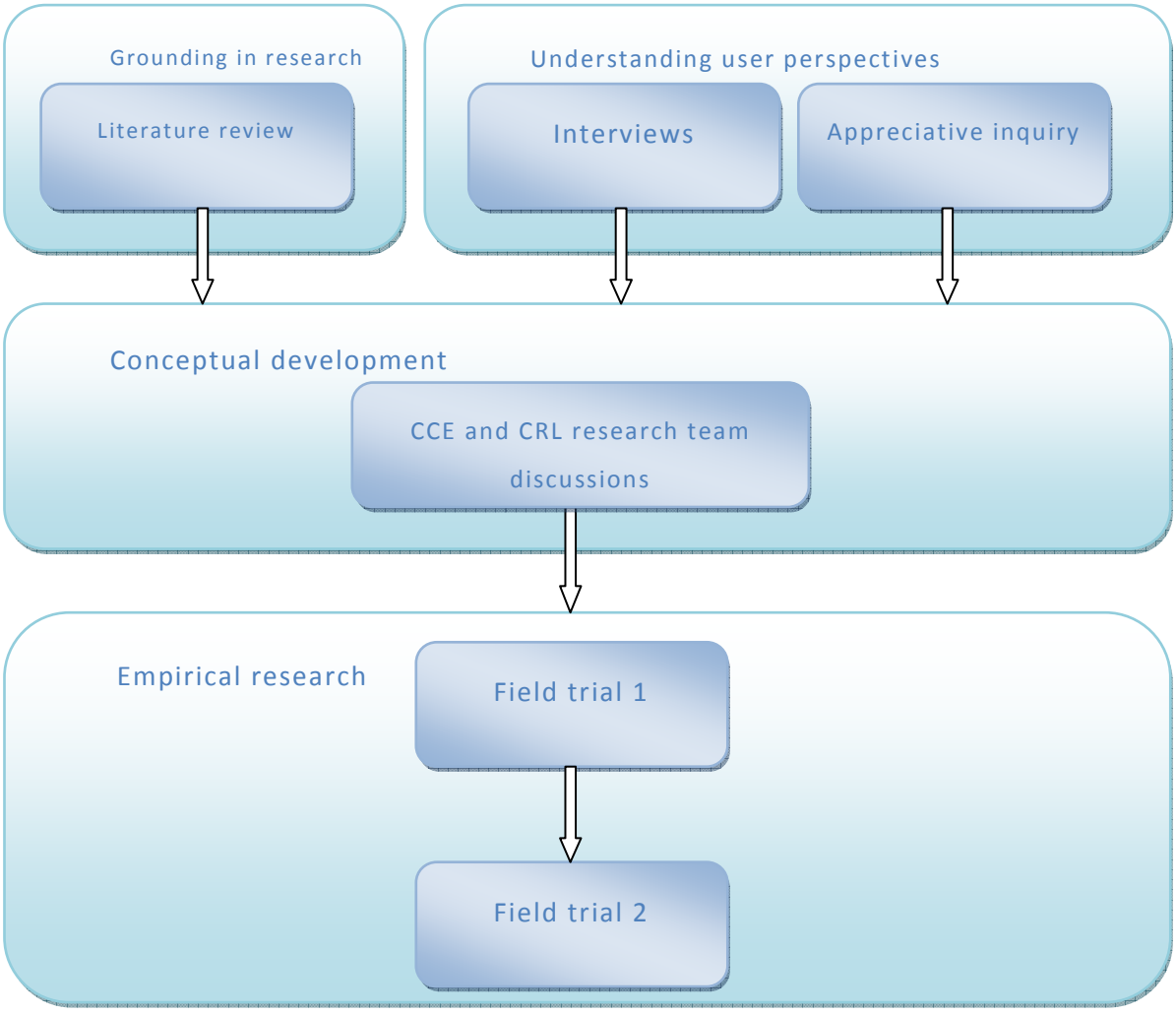

Figure 1 Outline of the research project

An initial literature review informed the project's direction, situating it within a broad body of research. To ground the project in best practice, inquiry with head teachers and senior practitioners informed the development of the assessment

tool. Collaboration with CCE further informed the conceptual development of the tool. An initial Field Trial (FT1) was developed to establish proof of concept for the assessment's framework and methods of application. Having determined that further development would be fruitful, a second Field Trial (FT2) was undertaken.

In scrutinising the written and verbal opinions of research participants and pupils throughout this project, we recognise that meaning and subjective experience of research participants are intertwined. Analysis and interpretation of this data adds a further layer of perspective. The ways in which these opinions are constructed by participants and represented by the research team are intrinsically subjective. We have thus paid close attention to ensuring that the multiple views are represented through a robust qualitative process of analysis.

Between each of the three layers in Figure 1, project progress was supported and monitored by a steering group. Steering group members included the teams from CCE and CRL, as well as experts in the field of creativity in education, and representatives from the Organisation for Economic Co-operation and Development (OECD). Members of the steering group and research team are shown in Appendix 2.

The first meeting of the steering group (July 2011) reviewed the draft literature review, reviewed feedback from the Appreciative Inquiry session and interviews, discussed the brief and plan for Field Trial 1, and debated the draft model of the assessment tool being field trialled. The second steering group meeting (October 2011) commented on the Field Trial 1 analysis, and on proposals for Field Trial 2. The third meeting (February 2012) reviewed the Field Trial 2 analysis, the final project report, and the expanded literature review.

2 Literature review summary

Our accompanying literature review (Spencer et al., 2012) underpinned this research study by exploring creativity and its assessment. It established the context and boundaries for this development project, grounding it in research knowledge. It recognised a diversity of debate and discourse around the study of creativity, and around its assessment. Because this study attempted to develop a framework for assessment of individuals, the literature review itself gave primary weight to focusing on the characteristics of the creative individual that might be assessed, rather than to assessing creative outputs or environments that might support creativity.

Fundamentally, the vision for this research project aligned with the purpose of CCE. It aimed to promote the 'noticing' of creativity in children, both inside and out of school, in order to enhance their aspirations, achievements, and skills. It was an inclusive vision, aiming to ensure *all* children and young people were helped to value and develop their creativity. These driving values positioned the project's view of creativity as fitting with the **'social good'** rhetoric of creativity identified by Banaji et al (2010). Creativity was seen as being important for the 'social and personal development of young people in communities and other social settings' (Banaji et al., 2010:35).

This project further positioned creativity as **'ubiquitous'**, taking the view that creativity can be 'everyday', and adopting Craft's 'little 'c' creativity', based on 'possibility thinking'. While recognising that this rhetoric of ubiquitous creativity 'challeng[ed] the narrowness of the national curriculum and of market-driven conceptualisations of the need for creativity' (Banaji et al., 2010:32), the

project's values loosely aligned also with the **'economic imperative'** rhetoric. This related to the NACCCE[1] promotion of creativity in education for 'being able to compete in a global market, having a flexible workforce, facing national economic challenges, feeding the 'creative industries' and enabling youth to adapt to technological change' (Banaji et al., 2010:35).

The NACCCE policy review's (1999) **'democratic'** stance on creativity was further reflected in the driving values of this project. The research aimed to promote the development of creativity for all school-age children through the use of an assessment progression model that would provide a formative development tool for pupils and teachers. The key role of teachers in engaging with the tool in their everyday environment was to provide evidence of how use of the tool in the classroom could have potential for the transformation of teaching (at a moment in time) and teacher practice (developing over time), as well as for the development of learner creativity.

As a concept, creativity relates to both **intelligence** and **learning**. In terms of its similarly to intelligence, it is complex, multi-faceted, occurs across domains, has

[1] In 1999, the National Advisory Committee on Creative and Cultural Education (NACCCE) produced a report to the Government called *All Our Futures: Creativity, Culture and Education*. The committee's inquiry coincided with the Government's review of the National Curriculum and, thus, made recommendations for this review. It also included recommendations for a wider national strategy for creative and cultural education. The NACCCE report was a response to the Government's 1997 White Paper, *Excellence in Schools*, and it highlighted an undervaluing of the arts, humanities, and technology. Our literature review (Spencer et al., 2012) elaborates further on how the NACCCE report shaped the development of creativity within education in the UK.

levels, and can be developed. In terms of its similarity to learning, they both involve imagination and imitation, and are, again, both learnable. Creativity itself is one aspect of learning and although some aspects of learning use creative processes, they cannot be defined solely in terms of creativity.

On the whole, educational policy in the UK is currently unclear about the value it places on creativity. The Personal, Learning and Thinking Skills (PLTS) framework in England (and its equivalent in the other home nations) still exists and is used by schools, but is rarely referred to in policy. In so far as creativity is acknowledged it is often in response to concerns raised by employers. In this context creativity is normally defined in terms of its role in solving the problems and challenges pupils face beyond the classroom or, more explicitly, in relation to the so-called creative industries. The accompanying literature review details how there has been a marked change in priorities in recent years, following the 1999 NACCCE report.

In our review, the various, and sometimes conflicting, ways in which creativity is understood, researched, and practised were identified. This research project did not fully escape the tensions between these views, but sought to acknowledge and work with them to develop something of value. The assessment of creativity is a continuing challenge because of a number of fundamental tensions.

Creativity is a complex **multi-dimensional** phenomenon, which prevents promotion of a universally accepted definition (Treffinger et al., 2002). Over the course of several decades, developmental and educational psychologists have attempted to define and understand creativity and its constructs and measurement (Treffinger et al., 2002, Villalba, 2008). Numerous observable attributes (or traits, attitudes, dispositions, and temperaments) have been put forward, and attempts to establish a 'valid', discrete set, have been met with varying degrees of success (Hocevar, 1981, Lucas and Claxton, 2009, Villalba,

2008). In developing an assessment tool for the assessment of individuals' creativity, we aimed to select a cohesive set of dispositions.

Schools are **subject-dominated**. While creativity spans all subject areas and is not limited to the 'arts', there are inherent conflicts in attempting to ensure assessment of cross-curricular concepts. The degree to which creativity in a particular context is truly context-free is also ambiguous. As Craft (2008) comments, this makes the decision about what exactly to assess (and indeed what not to assess) problematic. Our assessment tool aimed to hold relevance within each area of the curriculum, while recognising that the way a particular disposition is expressed may be different depending upon context.

Manifestations of creativity are, to a degree, almost always the result of complex collaboration across social groups (Sawyer and DeZutter, 2009). The challenge for an assessment tool of individuals' creativity is in allowing sufficient scope for the **social element** of creativity to be accounted for. Our assessment tool allowed for this by valuing social dispositions.

Within schools there is an overriding agenda of **performativity** that competes with the creativity agenda (Menter, 2010), although both are recognised through policy as important. While there is evidence to suggest that the embedding of valuable dispositions such as creativity (and other learning dispositions) into lessons actually raises achievement (Watkins, 2010) there are, at the very least, perceived tensions and these ensure that many teachers focus more closely on high-stakes state-mandated testing (Wiliam et al., 2004). The lack of requirement to assess creativity in a national, summative way (or even formatively in class) contributes also to the undervaluing of creativity. The impact of the latest Curriculum review, with its proposal that foundation subjects no longer have detailed national attainment targets, remains to be seen

(DfE, 2011). Our assessment tool could not compete with the performativity culture prevalent at Key Stage 4.

Another tension highlighted by the review is the **purpose of assessment** of creativity: whether it should be formative (helping pupils improve), or summative (enabling comparison). Behind this debate is an issue of pedagogy – whether teachers see knowledge as imparted by the teacher and fixed, or co-constructed with the learner (Hargreaves 2005) - and a lack of cohesion, historically, between policy and pedagogy in England (Harris and Burn, 2011). As long as an assessment framework is open to interpretation by teachers (which of course it always will be) there is the risk that it will be utilised in word alone, rather than in spirit. Our tool aimed to be of formative use, first and foremost. Over time, its summative use may develop.

Our review found a variety of categories of assessment instruments (Plucker and Makel, 2010) assessing the creative person, product, potential, or place, all of which have their drawbacks (Beattie, 2000, Hocevar, 1981). A focus on the creative person, and his or her dispositions, necessitates an assessment instrument that captures instances of those dispositions in action. Some possible ways forward included use of good descriptive rubrics supported by examples (Lindström, 2006), assessment by peers, assessment using portfolios, assessment using mixed methods (Treffinger et al., 2002) and self-assessment. While our initial trial was situated as a proof of concept with teachers, our second trial focused on self-assessment of the individual.

Assessment in England has been shaped significantly by the Assessment for Learning (AfL) movement in recent years. The English assessment tradition diverges from the approach, more common in the US for instance, that values only paper-and-pencil style tests for gaining assessment information. Our literature review finds that the benefits of AfL to learning, a formative approach

to assessment, are supported by a large body of research and practice. The review leads us to favour a formative approach to assessment in designing a tool to trial. This decision is one of the most significant because of its potential impact upon quality of teaching and learning.

3 User perspectives

The experience and opinion of expert practitioners were sought in the early stages of the project. A set of semi-structured interviews and an Appreciative Inquiry session were designed to achieve this.

3.1 Semi-structured interviews

In May 2011 the research team held interviews with seven headteachers, creative agents and senior staff, to ascertain their views over current practice, the desirability of assessing creativity, and possible internal and external barriers to successful assessment. Interviewees were chosen because of their prior experience of working with Creative Partnerships. They are identified in Appendix 1 and the interview schedule is detailed in Appendix 3. Questions related to three key areas:

1. Individuals' experience of assessing creativity in children;
2. Their perceptions about the desirability and feasibility of developing an assessment framework for tracking progression of creativity in children;
3. Their availability and willingness to be involved in the field trials.

All the schools had experience of developing new approaches to creativity. All, too, had a view of creativity and of creative learning which sees it as a set of dispositions or wider skills capable of being manifested in any school subject and both within and beyond the formal school setting. Each of the individuals interviewed by the research team was positive about the value of creating a more precise definition of creativity for the purposes of assessment.

The schools had varying experiences; some positive and some negative, about attempting to assess creativity. They divided between those who felt that it was quite wrong to try and assess creativity summatively, and those who were agnostic about it. In the former group, assessment was seen as a means of supporting pupils to learn formatively and helping teachers teach more effectively by being clearer about what was within the scope of creativity and creative learning. In the latter group concerns centred on the difficulty of reliably assessing progress in creativity and a lingering fear that any summative data produced (e.g. using fixed scores or levels) might be used comparably to create a 'league table of creative schools'. A number of the schools were aware of approaches adopted by other Creative Partnership schools, such as The Creativity Wheel[2]. Most were experimenting with assessment approaches which meshed in with their overall approach to assessment. But none had specifically identified any one existing approach which they were sufficiently contented to use. Each saw the value of the development of a formative tool. Each saw the potential for an assessment framework to raise the status of creativity in schools.

Numerous practical concerns were raised, such as moderation arrangements, and the engagement of several teachers in the process at secondary level, and how that would be organised. Those with an interest in pupils with regard to special education were keen to point out that very small steps could indicate

[2] The Creativity Wheel is a framework for assessing creativity developed by Creative Partnerships Durham Sunderland. It is a freely available tool that has been used by many schools. In line with the Qualifications Curriculum Authority (QCA) definition of creativity the tool is divided into three themes: 'imagination with a purpose', 'originality', and 'value'.

real progress in their school context and that a fine grained approach such as this would be beneficial to them.

3.2 Appreciative inquiry

In May 2011, a well attended Appreciative Inquiry session was held at CCE's London office, and facilitated by the CRL research team. This approach to facilitating meetings draws on the work of David Cooperrider and colleagues (2005). It encourages participants to focus both on what is already going well ('Discovering') and on what they might really like to do if time and money were no object ('Dreaming').

Over 30 headteachers, teachers, and creative practitioners gathered for this one day workshop to tease out what had worked in the past, what best-practice might look like, what teachers would do if they were allowed to be creative and 'dream big', and what some of the features of a good tool might look like.

Attendees were drawn from schools representing a large geographical pool, and represented schools familiar with the notion of assessing progression in creativity to varying degrees. Their predisposition to be favourable towards the concept lent success to the session, which depended upon the ideas and input of this self-selecting group of expert practitioners.

The session followed the outline shown below, with the preceding points as background forming part of the team's introduction. Six round-table groups of practitioners took part.

- Introductions and aims of session
    - Our understanding of creativity, and how it might be assessed, informed by the literature review
- About Appreciative Inquiry (AI) and how we can use an AI approach
- 'Discovering' exercise (round-table discussions)
    - Creative assessment tools that work
    - Useful creative assessment frameworks
    - Elements of good practice in assessing creativity
    - More generally what we know about assessment methods which 'work' in schools
- 'Dreaming' exercise (round-table discussions):
    - The best possible creative assessment tools
    - What a really good creative assessment framework might look like
    - How assessment materials for developing creativity might be best used in schools
- 'Appreciating'
- Some tentative first thinking: an introduction to the research team's plans
- 'Agreeing'
    - Each group made five recommendations, and addressed the issues of what our tool should look like.
- Plenary discussion:
    - A discussion about how we could avoid the use of 'levels' that participants had reacted negatively to.
    - What other lines of inquiry we might follow
    - Talking about how participants might be involved
    - Next steps

In sharing our plan, we introduced the concept of a three-dimensional model of assessment that would track development in 'strength', 'breadth', and 'depth'.

Strengthening was about becoming less reliant on teacher prompts and scaffolding, or on congenial conditions. Broadening was about exercising creative habits in new contexts; transferring habits into a new domain. Deepening was about the exercise of habits becoming more sophisticated, more appropriate to the occasion.

A number of key findings were taken from the day and informed the design of the model and FT1.

3.2.1 What worked well?

A range of approaches were said to work well, from the familiar (e.g. use of the Personal Learning and Thinking Skills [PLTS] framework, tape recording of children talking, peer assessment, and on-the-spot annotation of work by sticky notes) to the less commonly used (e.g. online portfolio approach / virtual scrapbook for uploading evidence) and the creation of individual web-sites by children. In designing our approach we sought to be not only aspirational but also practical in what we were asking of teachers.

3.2.2 What would practitioners recommend?

A range of recommendations were made: maintaining simplicity and flexibility was a key piece of advice, as was ensuring progress could be displayed clearly. Domain independence was favoured, as was the inclusion of all aspects of pupils' experience. Development of the tool to allow online sharing of examples was suggested. Teachers wanted the tool to be recognised and valued by 'Ofsted, Government, and children's authorities'. Bearing these factors in mind, we aimed to keep the tool as simple as possible, and to allow for the recording of a broad range of examples of creativity.

3.2.3 Views about the purpose of assessment

Supporting the literature review, user perspectives suggested that the assessment tool's development should concentrate on evidencing learnable creative dispositions in individuals. Practitioners were overwhelmingly supportive of the trialling of a tool to assess creativity, and the valuing of children's formative development.

Although cautious about labelling pupils, teachers were able to balance this against the need to paint a 'true' picture of each pupil's creativity 'profile' across a number of inclusive dimensions, so that valuable formative assessment could take place with pupils. They also felt that pupil-led assessment would strengthen pupil 'voice', relieve the burden on teachers, and help ensure there was continuing motivation for assessment.

3.2.4 Views about language

The **language** used to describe the tool was considered important. Teachers preferred 'tracking' or 'mapping' to 'profiling' and 'assessing'. Mapping was seen by teachers as 'less one-directional', but profiling as 'a bit forensic'. A key success criterion for the tool was considered by teachers to be whether it helped pupils to become more creative, rather than simply making them more articulate about creativity. In choosing the language of our framework we tried to achieve face validity (user agreement that the framework appeared to measure what it claimed to) and precision, confirming these later in a focus group session with secondary age pupils.

3.2.5 Views about use of 'levels'

Initial responses to the concept of 'levels' were negative. This was substantially due to misinterpretation about what 'levels' were intended to convey. Levels was seen to be too 'numerical' and 'linear' for something as complex as creativity. It became clear from teachers' explanations, however, that use of the

word ‘levels’ generated certain assumptions about amalgamating scores across the board (as with Standard Assessment Tests, for example), which they felt was not constructive or useful. They expressed dissatisfaction at the notion of giving a ‘score’ rather than a profile across a set of creative dispositions. They suggested that it gave an abstract mark and not a concrete understanding; that the level became ‘an end and not a means’. The intention of the team, however, was always to keep levels representing particular creative dispositions (be they numeric, or qualitative descriptors) discrete from one another.

Other objections to levels were raised. First, teachers had reservations about anything that labelled pupils as creatively 'weak', and were against assessing in a way that might discourage pupils because of ‘negative connotations’. Secondly, many teachers felt that there was a real risk that labelling children in terms of their levels of creative development was potentially hazardous. Thirdly, there was also the concern that levels are static and might not allow the tool to ‘flow’. By the end of the session it had been agreed collectively that without clear levels or criteria against which to make judgments, it would be difficult to produce either a formative or summative tool.

One teacher referred twice to amalgamating levels to arrive at an overall ‘level’ or grading of each child. This teacher talked about ‘banking credits’ as though a deficit in one disposition should be compensated for by possession of another, rather than being identified and worked upon. Similarly, another teacher recommended use of percentages in demonstrating how creative individual children were overall. We believe such manipulation of scores would be of little formative use to pupils, however.

A third teacher used the word ‘formative’ to refer to summative assessment, and a fourth suggested profiling pupils in order to ‘match’ them to employers. This suggests a view of assessment rather like an IQ or psychometric test, rather than

one that has formative use. These comments suggest that even in a room full of practitioners championing the values of formative assessment, some will try to use such a tool summatively to compare pupils. Clear communication of the purpose of the tool – to teachers and pupils – was found to be necessary in order to ensure it was used beneficially in classrooms.

Nobody posed the question of how teachers or learners would use the information collected during tracking.

3.2.6 Views about associating age and ability

The research team's thinking was that as pupils moved through Key Stages in school, the complexity of the tool would increase, enabling more precision tracking. The comment was made by teachers that we should not assume that ages correspond with abilities.

Teachers brought with them various tools which they had experience of using. We discovered that the precise details regarding the construction and composition of such an instrument impacted significantly on the degree to which teachers found tools acceptable. Teachers were very sensitive to the particular graphical and linguistic ways in which tools were presented. Even seemingly trivial details affected favourability of a tool, for example whether numbers, letters, or words were used to depict the range of levels.

3.2.7 Views about presentation

Two main tool formats were a circle, and a grid. There was no consensus about which **format** was preferred. One well-known annotated grid version was said by teachers to be too dense, 'regimented or wordy'. A well-known circle tool was said by a primary teacher not to be user friendly at primary level. A suite of tools was suggested; different versions being made available to teachers and pupils. We adopted this approach for FT1; giving teachers the choice of presentation.

4 Conceptual development

Following on from our earlier literature review and from interactions with potential end users and expert practitioners, conceptual development was informed further by consultation with CCE. CRL was selected for this project precisely because of our interests in and established expertise in understanding the dispositions which make up learning and creativity. In a vast field comprising multiple views of creativity, the task of narrowing our focus was a pre-requisite to developing a triallable tool.

Five dimensions were selected for entirely pragmatic reasons. For example, the number is manageable but yet allows for a level of precision (Miller, 1956). The five dimensions selected are all strongly present in the literature review. Two – 'Disciplined' and 'Collaborative' – reflect two traditions within creativity potentially underrepresented in schools. 'Discipline' draws on a literature around the development of expertise and unashamedly stresses the craft and skill elements of creativity. Seymour Papert and Idit Harel (1991), for example, describe the rich, complex, and cognitively sophisticated work involved in 'hands-on' crafting, and the way pupils are able to be creative in their imagination of new possibilities as they work with their hands.

'Collaborative' draws on literatures of communities of practice, communities of learning and social intelligence. The work of Jean Lave and Etienne Wenger (1991) on communities of practice explains the impacts of work interactions upon individuals' habits and dispositions. Chris Watkins (2005) has applied the idea of a community of practice to the classroom, describing the importance of such interactions for learning, and how they are formed.

From the literature review it was clear that the tool should aim to assess a range of creative dispositions in the individual. This ruled out a number of other

possibilities; for example, the assessment of 'originality', present in The Creativity Wheel, for example. The notion of 'originality', while given importance by the NACCCE report (and others), was not focused upon further because of its relationship with the product, (which we were not assessing) rather than the person.

A number of other criteria for the tool became clear as the literature review and the project's brief were meshed together:

- It was essential that an assessment framework should be useful to teachers. While it might involve peers, it would almost certainly involve the individual concerned in order to stimulate formative learning conversations.
- Relating to this first point, the framework should not attempt to be an exhaustive or definitive framework for describing the creative individual. Although making use of psychological constructs, the study should not involve statistical factor analysis or similar methods intended to attain a psychologically 'valid' profile. The study is concerned ultimately with utility.
- The tool must be useful to teachers who are interested in the 'learnability' of creative mindedness. This means it has to be at the right 'grain' of analysis; not so abstract that teachers cannot easily see how they might address the learnability of each habit of mind; but not so fine-grained that the framework becomes unwieldy or unworkable.
- The terminology has to be clear, accessible, unambiguous, and have face validity with the target audience. With this in mind, we decided that 'habits' (creative dispositions) might best be described as adjectives, and sub-habits as 'gerunds' (verbal nouns, or action phrases). Abstract nominalisations might best be avoided.

- Consistent with teachers' expressed preferences, the tool must be applicable to a broad range of real-world types of creativity, including scientific and intellectual, visual and performing arts, and professions, including crafts and design.
- The framework should be as comprehensive as possible, covering all the most important creative qualities of mind. The elements of the framework should be as distinct as possible, having evidently different foci, and also being internally coherent, with the sub-habits showing a clearly understandable 'family relationship' to one other. The multiple realities and perspectives that users of a creativity framework will experience mean that a sense of total objectivity about terms cannot be claimed. Instead, the framework should hold to qualitative principles of trustworthiness, quality and rigour (Lincoln and Guba, 1985). Its terms should hold truth value; remaining intuitively distinct from one another and possessing confirmability as they are shown to be useful descriptors to both teachers and pupils. For teachers, face validity, demonstrated through the tools' usefulness in stimulating recognition and perception of creativity development in individuals, was of more significance.
- The framework should be consistent with previous policy and published research on creative traits.

Conceptual development involved selection of appropriate, distinct, learnable habits (or creative dispositions) demonstrated by creative individuals. Through recognition and development of these habits, individuals could become more creative within a particular context.

CRL's background in learning science enabled us to approach this work from a 'habits of mind' perspective. 'Habits of Mind' is a phrase coined by Art Costa and Bena Kallick in the US (2000). Habits of mind sees learning as being about getting into the habit of effective thinking, rather than being about particular

behaviours. The habits of mind are not a tick list of demonstrable behaviours, but instead, are a set of tendencies employed by learners at the right time to solve a problem. Costa and Kallick currently define 16 habits of mind important for effective learning, while recognising that there may be more. In the UK, Guy Claxton's own work (2007), particularly with *Building Learning Power*, simultaneously identified a similar set of habits and used them to develop an approach to learning grounded in research and practical experience.

We propose that the same approach can be used to develop creativity. The literature review highlighted the similarities between learning and creativity, recognising that some aspects of self-regulation and meta-learning make use of creative processes. It is, therefore, important to note that creative habits are not entirely independent from other aspects of an individual's functioning and are often included in other broad constructs, such as intelligence and learning. A test for creativity is highly likely to contain scores relating to intelligence (Klein, 1967).

Finally, the focus on utility of the tool for development of creativity in pupils lends itself to a formative tool. The importance of formative assessment was highlighted by the literature review.

4.1 Use of five creative 'habits'

There have been several attempts to map the habits of mind that underlie creative performance (e.g. Kaufman and Sternberg, 2010, Root-Bernstein and Root-Bernstein, 1999). Not all of these met our criteria for inclusion within a tool of dispositions to present to teachers (Feist, 2010). Many analyses of the creative personality, for example, have focused too closely on specialised forms of creativity such as scientific or artistic endeavour, which were not immediately applicable to the kinds of activity that teachers would more easily identify in

schools and classrooms. Some lists of creativity-related traits were simply too long for our teachers to be able to find manageable.

Root-Bernstein and Root-Bernstein (1999), for example, list 13 such traits, all of which have a degree of both empirical and face validity. They are careful observation, use of sensory imagination, the ability to abstract essentials, recognising patterns in information, forming new patterns, generating useful analogies, use of intuition and embodied cognition, empathy and shifting perspectives, mapping between different dimensional representations, creating and adapting models, playfulness with material and ideas, transforming ideas into different media, and synthesising elements of thought into a coherent whole. Even from such a brief listing, it will be obvious that some of these are of quite a technical psychological nature, and would not be easily accessible to many classroom teachers. It is also sometimes hard to make a clear distinction between so many categories.

Thus we needed to make judgments about which of the many listed traits and habits might be both accessible and appropriate at the school level, as well as clearly being linked to the core concept of creativity itself. At the conceptual development stage, our first model thus centred on the following five core habits of the creative mind, that seemed to capture a good deal of the territory mapped by researchers interested in the habits of mind aspect of creativity. Sub-habits are also shown.

1. Inquisitive. Clearly creative individuals are good at uncovering and pursing interesting and worthwhile questions in their creative domain
    - Wondering and questioning
    - Exploring and investigating
    - Challenging assumptions

2. Persistent. Ever since Thomas Edison's 'genius is one percent inspiration and 99 percent perspiration', the role of determination in creativity has been repeatedly emphasised.
    - Sticking with difficulty
    - Daring to be different
    - Tolerating uncertainty
3. Imaginative. At the heart of a wide range of analyses of the creative personality is the ability to come up with imaginative solutions and possibilities
    - Playing with possibilities
    - Making connections
    - Using intuition
4. Collaborative. Many current approaches to creativity, such as that of John-Steiner (John-Steiner, 2006), stress the social and collaborative nature of the creative process
    - Sharing the product
    - Giving and receiving feedback
    - Cooperating appropriately
5. Disciplined. As a counterbalance to the 'dreamy', imaginative side of creativity, most authors also stress the need for knowledge and craft in shaping the creative product
    - Developing techniques
    - Reflecting critically
    - Crafting and improving

The model we tested as a tool in FT1 is shown below. Detailed instructions given to teachers are shown in Appendix 6. The tool was designed so that development of each of the 15 sub-habits could be mapped along three dimensions:

1. strength - this was seen in the level of independence demonstrated by pupils in terms of their need for teacher prompts or scaffolding, or congenial conditions;
2. breadth – this was seen in the tendency of pupils to exercise creative dispositions in new contexts, or in a new domain; and
3. depth – this was seen in the level of sophistication of disposition application and the extent to which application of dispositions was appropriate to the occasion.

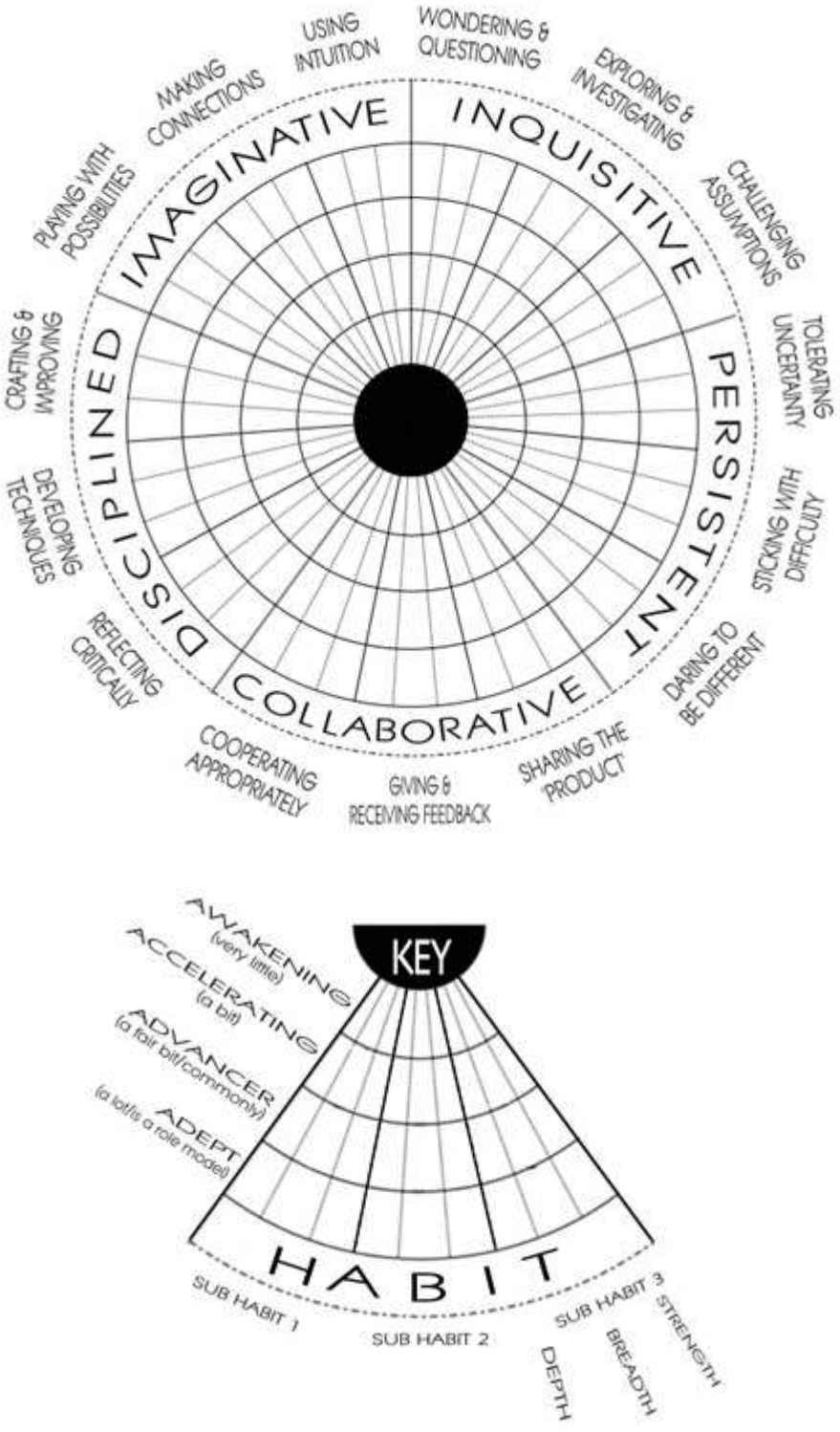

Figure 2 FT1 Tool

5 Field Trial 1

5.1 Introduction

FT1 emerged from our earlier literature review, user consultation, and conceptual development. The findings from FT1 strongly supported the original plan to conduct FT2 and helped develop an evidence informed direction for this second trial.

Groups of teachers from six schools across England (shown in Appendix 5) were involved in FT1. This trial focused on the habit being 'inquisitive', and its sub-habits. A full description of each sub-habit relating to being 'inquisitive' is given in Appendix 4. The tool itself, and guidance for teachers, is shown in Appendix 6.

Each group trialled the tool over the second part of the summer term 2010/11. Teacher representatives from five of the six schools attended a 'train the trainer' session in London. These teachers took the tool back to their schools and shared it with their colleagues. The headteacher of a sixth school did not take part in the development of the tool, but participated in two telephone conference calls and shared the tool with his colleagues. At this school, pupils were involved in trialling the tool also. The pilot did not otherwise make provision for exploring the role of the learner in using the tool.

5.2 Aim and objectives

FT1 was designed to show:

- How easily teachers were able to map a pupil onto the framework;
- How easily teachers were able to decide on, and gather, suitable decision-making evidence/data;

- What the sticking points and 'hard parts' were in the process; and
- How we could improve this process.

The specific objectives of FT1 were to:

a) Validate the five proposed creativity 'habits of mind' and their related sub-habits by asking schools to 'test out' the tool with relation to one sub-habit only, and to give their opinion on the relevance and appropriateness of the remaining four.

b) Validate CRL's approach to assess progression in creativity using three elements – 'strength', 'breadth' and 'depth'.

c) Test (a) and (b) in practice by adapting the circle tool AND/OR grid tool.

d) Test (a), (b) and (c), using an agreed range of evidence sources.

e) Develop materials for a more extensive Field Trial in Autumn 2011.

The extent to which it met these criteria is overviewed in section 5.5.

5.3 Research methods

5.3.1 Design

Data collection was situated within a case study design involving six schools. The case study research design is typically used for qualitative data collection involving a number of groups of participants.

FT1 was teacher-led, involving design, planning and co-ordination from the project team. Both primary and secondary schools were involved.

5.3.2 Role of participants

Each school identified a **project coordinator** who attended our 'train the trainer' session (see 5.1). Coordinators communicated the project to participating teachers at their school using the materials shown in Appendix 6. Coordinators also arranged for teachers to gather for completion of a pre-formatted end-of-project report.

As detailed in Appendix 6, teachers were each asked to focus on six to 12 pupils in the year groups we specified. For each pupil, they were asked to attempt to map the child's profile at a single moment in time in relation to the three dimensions 'strength', 'breadth', and 'depth' (see 3.2) of the habit 'imaginative'.

5.4 Data collection and analysis

5.4.1 Participants

Participating schools are shown in the table (and more fully in Appendix 1), which indicates how many teachers trialled the tools at each.

School	Year groups / Subject (number of teachers)	Number of assessment tools completed
Primary		
Priory	Nursery (N),3,5 / General (3)	13 grids, 1 circle
Our Lady of Victory	N, Reception (R),3,5,5 / General (5)	24 circles, 4 grids
McMillan	N / General (3)	6 grids
3 primary		25 circles, 23 grids
Secondary		
Green	7 / English, Maths, Science (3) 10 / English, Maths, Science (3)	52 circles

Winton	7 / Evolve, English, Drama, Maths (4)	50 circles
South Dartmoor	8 / Technology (1) 9 / Maths, English (2) 10 / PE, Tech, Graphics, Dance (4) 11 / RS (1) 12/13 Dance (1) 13 / Photography (1)	33 circles, 26 grids
3 secondary		135 circles, 26 grids
6 schools		**209 tools**

Table 1 FT1 Participants

5.4.2 Reports

Each school prepared a pre-formatted report responding to 52 questions, which probed for respondents' views on every aspect of the tool. Questions were predominantly constructed using a Likert-type scale, which prompted for set responses. The 52 questions are shown in Appendix 7.

5.4.3 Analysis

Analysis was a four stage process and is described broadly below:

Stage 1: An initial question-by-question analysis was carried out on schools' responses to each of the 52 questions.

Stage 2: In addition, teachers were asked to summarise their thoughts on what had worked well, or less well in the trial. Schools' summaries were generally written as one block of text rather than as distinct responses to the five questions. These were prepared for analysis by moving text as necessary, to ensure responses to each of the five questions contained only relevant data.

Stage 3: Both initial analyses were read through for key themes relating to the two categories:

- What teachers liked about the tool (section 5.5.1) ; and
- What teachers would change about the tool (section 5.5.2).

Within each of these two categories a number of themes (and sub-themes) emerged. Once the structure of themes within the two categories was determined, all data (the initial question-by-question analysis to the 52 questions, and the initial analysis of the summaries) was analysed by collecting it together within this structure.

Stage 4: Interpretive statements were constructed from the collated data, summarising teachers' opinions, using many supporting quotations. The resulting overview, laid out below, thus explores what schools liked, or would change, about the tool they trialled. Quotations are taken from reports prepared by schools.

5.5 Findings

5.5.1 What teachers liked

5.5.1.1 The tool was interesting and useful

South Dartmoor teachers believed that the work this tool represented 'was vitally important'. Winton teachers 'all really liked the trials once we got into it' and believed they would continue to use the tool 'to our advantage as a school!'. They found the evidence they collected from pupil interviews and observations was 'invaluable' and that it provided them with a platform for 'learning conversations to go much deeper'.

Teachers at Our Lady found the notion of habits interesting. Although some were initially sceptical, they found overall that the act of using this tool made teachers think about 'what children are doing in these areas'. They became more interested as they became more involved.

The tool made teachers consider how they could think more creatively about planning creativity opportunities for pupils [Winton], how they could personalise the curriculum for pupils, whether they gave pupils in KS2 sufficient time and space for wondering and questioning, why some children did not ask as many questions as others [Our Lady], and how they questioned children [Priory]. It highlighted to teachers certain trends, such as the way boys in Reception tended to ask more questions [Our Lady].

5.5.1.2 The tool could be adapted by teachers

Teachers at Our Lady tried different ways of using the tool: some cut out the 'inquisitive' segment being trialled for FT1 and stuck it within the evidence. Priory amended the tool completely to suit their teachers. Winton teachers cut out the circle and pasted an enlarged (pared down) version onto a sheet with additional space for comments.

5.5.1.3 Breaking down habits into sub-habits was helpful

Priory teachers liked the way habits were broken down into sub-habits. This helped them to 'focus the lessons on habits' in their lesson planning.

5.5.1.4 The tool was all inclusive

With the exception of McMillan's notion of 'well-being', teachers did not identify any habits or sub-habits that they believed the tool had missed. Other labels they mentioned were alternative names for our own (e.g. 'team worker' to replace 'collaborator' at Our Lady).

5.5.2 What teachers would change

Eleven key areas where teachers identified potential for improvement related to:

1. The three dimensions of the framework (strength, breadth, and depth)
2. The initial appearance of the framework
3. Issues with the circle and the grid tools
4. The language of 'habits'
5. The progression labels
6. Consistency of use among teachers and between schools
7. The need for moderation
8. The evidence base, and the ease of evidence collection
9. Individual teachers' (and pupils') beliefs about creativity and its assessment
10. Team dynamics
11. The demands of time

Under headings that reflect potential solutions, the challenges within each of these areas are discussed.

5.5.2.1 <u>The framework's three dimensions</u>

(a) Clarify and/or simplify the three dimensions (strength, breadth, depth)

Regarding the ease with which teachers were able judge strength, breadth, and depth of each sub-habit, and how easily they were able to decide on and gather supporting evidence, responses were very mixed. Reports made a number of references to the issue of dimensions, as discussed below.

The concept of assessing sub-habits dimensionally was seen as confusing: without a lot of thought, teachers found differentiation between the dimensions difficult, and some were confused to the point where recording sheets submitted did not make sense, or interpretations varied from one school to another. South Dartmoor's pupils found the three concepts difficult to distinguish between. They also preferred words that did not require looking up: 'strength' made more sense to them when referred to as 'independence'. They recommended their own grid, which they felt explained their criteria for the learning habits in a more 'accessible way'.

The detail inherent in assessing across three dimensions was also seen as unnecessary [South Dartmoor] and 'not particularly useful' [South Dartmoor].

Concern over the number of judgments required was a common issue. Teachers at Winton thought the dimensions would prove challenging for teachers to differentiate between, particularly when evaluating large numbers of pupils. Similarly, Priory's Head of Year 3 saw the combination of three dimensions and four progression labels as 'too much to assess whilst dealing with the day to day rigours of a class of 31 children'.

South Dartmoor teachers believed the tool would be simpler to complete if these three dimensions were not taken into account. Teachers at Green agreed, and advised that the tool should require a 'process that involved fewer judgments'.

The full framework for FT1 would require each teacher to choose between four progression levels for 15 x three judgments, for each pupil. Suggestions that there were too many, and that some could be combined, were made by both pupils and teachers. While EYFS teachers assessed at this level of detail for every

child anyway; beyond EYFS, contact time with pupils (and thus the ability for teachers to form judgments from experience) was an issue, particularly in schools that began 'setting' pupils as early as Year 5. This was also particularly noticeable at secondary level, where high volume of pupils, and low levels of contact time, made the task prohibitively burdensome for teachers.

Strength was easier to assess in certain situations: in the Early Years, where staff were familiar with the process [Our Lady], when teachers provided creative opportunities [Winton], and with children of certain attitudes that allowed them to challenge assumptions [Our Lady].

Strength was made more difficult with: pupils with 'lower levels of understanding' [Priory], summer-born Nursery children [McMillan], and when only looking at a snap-shot in time [South Dartmoor].

Breadth was easier to assess when: a wide range of activities made it possible to look at various contexts [Our Lady], when teachers had a high level of understanding of how to encourage good questioning and thinking [Winton], in particular contexts that made it easier to see [South Dartmoor], over time through familiarity with the assessment tool [Our Lady], and when teachers knew pupils well [South Dartmoor].

Breadth was made more difficult to assess, particularly in the short space of time [Our Lady; South Dartmoor], but also: 'without another tranche of meetings' [Green], when pupils did not have the opportunity to demonstrate it [Winton], where teachers did not have knowledge of pupils; where beliefs were held that this was not necessary with very young children [McMillan] and again when only looking at a snap-shot in time [South Dartmoor].

Depth was not a problem for McMillan and South Dartmoor teachers to monitor where the evidence base was wider [South Dartmoor] with the exception of 'challenging assumptions', which was problematic at both schools. The four other schools all found this sub-habit difficult or did not measure it, believing that it needed to be carried out over a much longer period of time [Winton].

Criticisms also related to the volume of information required, to the necessity of measuring in this level of detail, and to the difficulty of distinguishing between the three dimensions.

5.5.2.2 Initial appearance

(a) Make the tool appear less 'daunting'

First appearances mattered. The full version of the grid and circle was still seen by some [Our Lady] as 'scary' and 'like a lot of work' but teachers recognised that the part of the tool they had trialled had looked more complicated than it actually was. Some teachers were uncertain initially 'due to their lack of understanding and assumptions that it all had to be completed at once' [Winton].

(b) Make the tool easier to interpret

Perhaps because of the multidimensional nature of what it measures, the grid itself was not easy to use or interpret [South Dartmoor].

(c) Reduce the number of words used

In the context of the three dimensions, South Dartmoor teachers wanted a 'simplified, less wordy approach'.

(d) Make it easier to explain to teachers

It took time to talk each teacher through use of the tool and 'puzzled faces' were the initial responses [Our Lady].

(e) Make the supporting documentation simpler

Most teachers at Our Lady had to refer to our descriptions of the habits each time they assessed a pupil, but believed familiarity with the tool would make this easier. McMillan Nursery teachers thought that the paperwork accompanying FT1 was 'over complicated and confusing' and would have preferred step-by-step, bullet-pointed, instructions to disseminate (rather than trainer materials only).

(f) Make the tool 'foolproof'

Although most completed tools were filled out clearly with no obvious signs of misunderstanding this was not always the case. Two teachers' grids suggested they did not differentiate between the strength / breadth / depth dimensions. A third teacher's completed circles and grids showed us that this teacher had not used the tools as intended. We required teachers to indicate a 'depth' score for a particular sub habit at a single moment in time for one pupil. On the grid, this teacher gave two scores, however, and on the circle she scored 'strength' and 'breadth' but not 'depth'.

(g) Make the language more child friendly

Priory teachers thought the language was 'research' rather than child friendly, and that child-friendly language would help with formative assessment of older children. The Nursery teacher suggested inclusion of images for Nursery. McMillan teachers also considered that the tool should be more 'meaningful to the individual children'.

(h) Avoid negative connotations

Based on her earlier experiences with a similar tool formatted as a circle, one teacher at Our Lady decided that our tool would be 'scary'. Teachers at Priory told us that they had 'bad memories of trying to access the Creativity Wheel and were less than enthusiastic about the form of the wheel or the grid'. They

decided to simplify the wheel and grid into a 'more accessible grid', which teachers were more willing to use.

(i) Make the tool work more like existing tools

Teachers wanted the tool to fit with their statutory assessment practices as well as the learning language they had incorporated into their schools already. For good reasons, our tool was not developed from the EYFS framework, the PLTS framework, the APP, or other skill recording sheets already familiar to teachers. It was a close match that was not close enough for some teachers. Because it did not fit with the statutory assessment practice it was just 'an extra piece of work' to teachers at McMillan. These teachers considered that it 'would have to be much simpler and integrated into the system to effectively manage this across the whole school'.

Teachers at Our Lady suggested that teachers needed to believe the tool was useful to their everyday practice by showing them where pupils need more experience. If it could replace existing 'foundation subject skill sheets' rather than competing with them, it may be more readily accepted. Teachers recorded using Learning Journeys on a continuing basis, but they (or Teaching Assistants) also had to complete individual termly assessments based on the EYFS framework. They found it fairly easy to track the children as observation in Nursery occurs all the time.

One teacher [Priory] also felt that it would be good if the language was easier to understand and even better if it related to the EYFS framework. Green teachers commented that ideas 'almost match up with the PLTS', which they liked.

Teachers found it very hard not to think in a linear fashion. Calls for the EYFS and PLTS frameworks, combined with many teachers' inability to assess in more than one dimension problematised this progression framework.

5.5.2.3 The grid and the circle

(a) Bear in mind the pros and cons of the circle and the grid when designing a further trial

The framework was turned into two tools: the 'circle', and the 'grid. On the whole, the concept of the tool was received enthusiastically by teachers. It was clear from FT1 that teachers wanted a tool to encompass many features, which were not necessarily compatible with one another. It was also clear that there was no consensus about which format – the circle or the grid – provided the required features in the best way. Teachers valued: space for annotation to write justifications of the scores (this was seen more readily on the grid. For example, a teacher at Priory was able to annotate the grid their school had modified). They valued built in space for evidence gathering, ease of tool reproduction, and clear legible graphics (words on the circle were very small when reproduced). They wanted the opportunity to use one tool for more than one pupil (the grid seemed to serve this purpose better). They asked for all necessary information to be on one sheet, for bullet-pointed handouts for users, and for quick easy filling in. For some teachers, this meant not having to colour in or shade boxes, which was said to be more of an issue with the circle. Teachers also wanted ease of interpretation at-a-glance (there were mixed views about which was easier), ease of comparison (some thought that the grid would enable this better); and ease of use in lessons while making quick observations (the grid worked best for this but some teachers then liked to populate the circle, which they saw as being easier to interpret).

While each of the two visual representations of the framework had teachers who took an instant disliking; each had benefits. Some teachers were drawn to the

grid; some to the circle. Two schools trialled both tools [South Dartmoor; Our Lady]; two trialled only the grid [McMillan; Priory]; and two trialled only the circle [Green; Winton].Where the grid was not trialled [Green and Winton] teachers thought it looked as though it 'took a bit more time to use' and would suit a 'linear thinker' [Winton]. The circle, on the other hand was seen as being 'very easy to use' [Winton].

Where the circle was not trialled it was seen as being more time consuming to 'colour in'. It was also 'harder to identify progress at a glance' [McMillan] and 'quite dry for use in primary schools' [Priory]. On the other hand, the grid, used 'due to time restraints' was 'easier to negotiate' and 'easy to see information at a glance' [McMillan]. A simplified version of the grid 'simplified the procedure'.

Where both tools were trialled 4 of 5 [South Dartmoor] and 3 of 5 [Our Lady] teachers preferred the grid overall. South Dartmoor pupils found the grid easier to complete. South Dartmoor teachers used the grid 'to gather information to then complete the chart'. At South Dartmoor 'all felt that the circle looked better and was easier to interpret visually' while the 'grid's design was hard to use. No lines meant it was hard to use and visually it was hard to interpret'. Similarly, one teacher at Our Lady thought the grid was 'difficult to use'. The downside of the circle, however, was that 'it's very small' [South Dartmoor] and 'a bit confusing and small to read' [Our Lady]. Our Lady preferred the grid because it enabled them to 'put all the class names down the grid' so that they could 'see where groups of children needed extra support' as well as giving them spaces to 'put notes about why they felt a child was at that level' [Our Lady].

Those who did not like the circle found it harder to read; the strength, breadth, and depth labels got missed off and teachers ignored them [South Dartmoor]. Others did not want to use something that required shading [McMillan].

One who did not like the grid had an aversion to boxes [Our Lady]. Others found that the grid allowed more annotation [Our Lady; South Dartmoor] and was easier to complete whilst observing lessons [South Dartmoor]. The grid could be used on a number of pupils at the same time [Our Lady].

Some said interpretation of the grid was harder at a glance and that it provided a 'clearer perspective on an overview of their skills' [South Dartmoor]. Others found the circle harder to interpret at a glance [McMillan].

There was evidence of some annotation by users of both the circle and the grid: comments attempted to provide some justification for the scores given.

5.5.2.4 Language of 'habits'

(a) The 'habits' and 'sub-habits' language needs changing in some cases

Teachers at Our Lady suggested that pupils responded to 'team worker' rather than to 'collaborative'.

At South Dartmoor pupils were already familiar with learning language so the addition of new phrases such as 'challenging assumptions' was kept to a minimum by using existing phrases such as 'argue', and 'reason'.

One teacher [Priory] thought the sub-habit concepts a bit 'airy' ('fluffy' / vague). She also wanted the language to be 'easier to understand'.

(b) The number of habits needs reducing

In the context of sub-habits, teachers at Green advised that the tool should require as few judgments as possible, which could involve 'combining some of the current strands' so that assessment may take place faster and more effectively. In their busy secondary school, the tool would not be used as it stands. Pupils at South Dartmoor also thought there were too many sub-habits.

Most teachers at Our Lady foresaw potential problems with the number of habits, which 'may be unworkable with whole classes', particularly when staff have so many other things to do. They suggested that 'Upper schools could do the full wheel and Primary a smaller scale'.

(c) The number of habits for pupils of different ages needs considering

There were some questions over the issue of progression; and whether certain sub-habits held relevance for the youngest pupils [Our Lady; McMillan].

5.5.2.5 Progression labels

(a) The progression labels need changing

The progression labels 'awakening', 'accelerating', 'advancer', and 'adept' were not universally popular, with some deeming them 'unnecessary', and 'overcomplicated' [South Dartmoor]. Some felt they needed to be simplified to something instantly unmistakable that teachers do not have to keep looking up. ABCD was used, as was 'not much', 'a little' etc. In two schools teachers used 'very little', 'a bit', 'a fair bit', and 'a lot' [Our Lady; South Dartmoor].

Some teachers suggested that they also needed to be meaningful to pupils, although perhaps only above EYFS, when pupil self-assessment was more widely practised.

(b) Lower level progression labels may need breaking down

A handful of teachers chose to shade in half boxes, presumably because they wished to have an additional level between 'evidence not yet seen' and 'awakening', and between 'awakening' and 'accelerating'.

(c) Progression labels may need an 'evidence not yet seen' category

Where gaps were present without explanation, recording sheets were ambiguous. It was not clear whether teachers did not know how to evidence progression in the sub-habit, or whether they believed there had been no progression.

5.5.2.6 Consistency of use

(a) Reiterate that teachers should trial all three sub-habits

At Our Lady, the Reception teacher looked only at 'wondering and questioning'. The teacher gave no explanation as to why the other two sub-habits were not trialled.

(b) Avoid over-modification of the tool

Schools modifying the tool created a problem. At Winton the dimensions 'strength', 'breadth', and 'depth' were cropped from the circle tool so that teachers did not monitor the dimensions at all. In some instances the circle was hard to read [Our Lady] and it is not easily edited (or tailored to schools' specific circumstances) using standard software.

Inconsistent definitions of 'strength', 'breadth', and 'depth' progression dimensions were noticed. Some schools defined these (rather than telling us what they thought of them as concepts, as asked) and showed a change in the meaning of the original (e.g. Winton's report referring to strength as frequency

of occurrence of habit rather than whether it happened unsupported and unprompted).

5.5.2.7 Moderation

(a) The project needs to moderate to develop descriptive rubrics

Teachers questioned whether they should assess creativity all the time, or in particular projects. They questioned the role of moderation across different subject areas or projects, when creativity might manifest itself very differently. Some believed that opportunities should be created, which would facilitate assessment more easily. Linked to this, the suggestion arose that assessment should not focus on every aspect at once. The tool's potential usefulness to class tutors was noted by some teachers.

The literature pointed us to the need for descriptive rubrics, and there was some agreement from teachers that descriptors were needed. Teachers at Our Lady, for example, asked what it would look like at each Key Stage for a habit to grow 'stronger', or what 'questioning' at 'awakening' level might look like when observed. They believed these decisions should be moderated. For some, this was to allow comparison (a little summative); for others it was more about ease of pinpointing pupils.

Teachers at Our Lady found that some Nursery and Reception children were scored higher than Y5 or Y3 pupils. While moderation may not prevent this, lack of moderation means some felt this 'may be a problem' if tracking pupils as they move up the school.

One teacher [Priory] wanted clearer guidance for each sub-habit. Some teachers at Our Lady said that progressive descriptors were needed 'for each age range' up the school.

5.5.2.8 Evidence

(a) Gathering evidence was sometimes difficult

This was often because of time constraints, particularly when teachers already had APP and skills sheets to do [Our Lady].

Gathering evidence also required a good knowledge of the pupils. Some teachers [South Dartmoor] thought that it would be a useful 'holistic assessment tool' for tutors.

(b) Evidence should be taken from one source, or set of sources, for fairness

Although indicative of a summative assessment mindset, some teachers had concerns that assessment was not 'fair' if some pupils were given more assessment time than others, or if assessment during FT1 took place in different subject areas. A teacher at Priory, for example, was not comfortable with the idea of assessing children in different activities.

(c) Evidence collection could run in tandem with 'learning journey books'

Evidence collection was a time consuming issue at Our Lady, where teachers suggested that collection of evidence 'has to be a part of what people already do'. They suggested that it could be made part of the theme / learning journey books that they use, so that some evidence (although perhaps not a full picture) is already collated for teachers.

A teacher at Priory thought that the tool could accompany a particular project that 'lends itself to' assessment of creativity. She felt this was particularly the

case with 'depth', which relates to skilfulness and complexity and, perhaps, needs other children to compare it with.

(d) Evidence needs to be observation and knowledge of pupils

A teacher at South Dartmoor recommended 'teacher observation and / or really knowing students'.

(e) Provide built in space for evidence

Teachers at South Dartmoor suggested that space for teachers and pupils to write comments would be a useful evidence source.

(f) Evidence should be collected over time

The 'snap-shot' trial assessment was not meant to facilitate collection of evidence in real-time. Snap-shot observation did not allow teachers to give credit to pupils for aspects of creativity they knew the pupil had displayed in the past. Some teachers tended to mark based on past experience rather than on current evidence. As such, we did not get a clear idea (in many cases) of the sources of evidence they had used.

It was very clear from comments on each circle record sheet at Winton that comments related to the teachers' perceptions of each pupil's habits of mind (built up from seeing prior work over time) rather than to specific evidenced instances around the time of the trial. This was also seen at Our Lady.

McMillan teachers 'struggled with the concept of snap shot observation' too, as did South Dartmoor teachers, as many teachers were working with new groups. They were so familiar with ongoing assessment (i.e. continuous recording and following of significant learning patterns) that, as one teacher told us, 'to pick a moment in time is maybe unproductive as it may not be the right moment'.

5.5.2.9 Beliefs and knowledge about creativity

(a) Teacher belief that creativity is 'hard to pin down' and that this is a good thing

A teacher at South Dartmoor was happy to measure 'learning' but commented that 'creativity seems to be an unmeasurable habit/discipline as it's hard to pin down and I feel this is a positive thing'.

(b) Teacher beliefs that certain habits have pre-requisites or are age-specific

Nursery teachers [McMillan] believed that the two habits 'collaboration' and 'discipline' were of less immediate importance to younger children and that these habits developed later. Similarly, a teacher at Priory suggested that certain sub-habits were not present for pupils of a certain age. She thought that 'challenging assumptions' (a sub-habit of being inquisitive) was just not relevant for Nursery.

An English teacher at Winton noticed that Year 10 pupils showed a 'can't be bothered' attitude, which masked a lack of confidence. We were aware of the possibility of scores going down as pupils got older.

(c) Some teachers believed that opportunities for creativity needed to be created

Some teachers found it easier to notice creative behaviour when they set up specific tasks [Our Lady] or projects [Priory]. Others drew on past experiences of such tasks [Our Lady] rather than current evidence.

(d) Insufficient knowledge of learning

Teachers' understanding of the learning concepts may have impinged on their keenness to use the tool. A Year 3 teacher [Our Lady] noticed that girls 'seemed to do very well in class' yet their questioning was not as frequent as that of the boys. The ability to question well and without fear of reprisal enhances individuals' learning and ability to cope when knowledge may be less certain and when they cannot get by on 'cleverness' alone. An awareness of the importance of developing these habits early on is important if the teacher is to value the habit and use the tool.

Teachers at Our Lady linked the habit of 'challenging assumptions' with pupils' attitudes and beliefs about their right to question teachers. This indicated that teachers may have thought the ability to challenge assumptions was a fixed attitude rather than a learnable habit. This could have had a bearing on their use of the tool.

(e) Addition of 'wellbeing'

McMillan's report mentioned that the tool should consider wellbeing. They did not explain how they linked this with the creativity habits.

(f) Pupil opinion

FT1 schools were all committed to the idea of developing creativity in pupils. Although they had mixed views about the form a creativity assessment tool should take, and about the extent to which this might be possible, they all saw the importance of recognising and developing creativity in pupils. One of our schools trialled the tool on pupils, and it was clear that this message about the importance of recognising and developing creativity could be better understood by pupils.

South Dartmoor's pupils' first reaction was that it was 'sad that creativity should be tried to be measured and pigeon-holed'. 'Higher ability' pupils questioned its

value, feeling that it was 'patronising' and that they carried out such self-assessment implicitly. They did not understand why they were measuring rather than just having an awareness. They thought that this tool might help the 'less able to identify skills that could be developed'.

The pupils questioned the number of sub-habits. Their suggestion that some of the sub-habits could be taught in class rather than assessed suggested that they had not made a connection between use of the tool and formative assessment.

(g) Pupils need to understand language of learning

A teacher at South Dartmoor suggested that pupils would need coaching in the language of creativity in addition to the language of learning that they already had in order to have 'background knowledge of what to exemplify'.

A teacher at Priory wanted the children to understand the tool too, so that they could use it [formatively].

5.5.2.10 Team dynamics

(a) Lack of co-ordination and class contact time

Issues of team dynamics were cited in Priory's report as the reason why the trial in one year group involved only the Head of Year. 'Staffing issues' (possibly absences, and also low levels of class contact time for the Head of Year) meant that trial co-ordination was impossible to manage.

5.5.2.11 Time demands

(a) Habits need introducing gradually

At Winton, teachers believed that 'one segment per term was do-able in terms of gathering evidence'.

(b) Successful trialling needs more time

Lack of time was a common complaint of teachers, who sometimes found collection of evidence at a moment in time an issue [Our Lady], particularly when they already had APP and skill sheets to complete. Teachers at both Our Lady and Winton believed that evidence for breadth needed to be gathered over a longer period of time and that moderation would be needed to ensure teachers were happy about where they had positioned pupils.

(c) Administrative burden at secondary schools

The administrative burden for secondary schools that teach in subject silos was potentially prohibitive [Green]. Teachers at Green referred to the challenging logistics of delivery and monitoring, which meant that the tool 'did not lend itself to our timetable and teaching structures'. Combined with their current tools, they did not believe it would be used consistently or with sufficient rigour.

(d) Contact with pupils in primary schools with 'setting'

Priory's core subjects in Y5 were taught in a setting system. Teachers were unable to follow pupils all day.

5.3 Summary and recommendations for further trialling

5.3.1 Conclusions

This section summarises the extent to which FT1 met its objectives. It then details key recommendations for further trialling. Positive responses from teachers underpinned our decision to conduct a second field trial to refine our assessment tool further.

FT1 had a range of objectives, which it was able to fulfill:

a) Validate the five proposed creativity 'habits of mind' and their related sub-habits by asking schools to 'test out' one of them, and discuss the remaining four.

- We found that the particular multifaceted conception of creativity behind the tool, shown in its five 'habits' was seen as sufficiently inclusive by teachers.
- The division of each of the five 'habits' into three 'sub-habits' led to an assessment task that proved too onerous for teachers.

b) Validate CRL's approach to assess progress using three elements – strength, breadth and depth.

- As a proof of concept, FT1 showed us that the five 'habits' were sufficiently comprehensive, and that teachers were able to situate individual pupils on a tool that gauged the extent to which pupils had developed each habit.
- The tool's approach to progression as three dimensions 'strength', 'breadth', and 'depth' was found to be an interesting one. In practice, however, the assessment task it generated was too burdensome and complex.

c) Test (a) and (b) in practice by adapting the circle tool and/or grid tool.

- Teachers adapted the circle and the grid, with varying degrees of success. Both were adapted to create more space for annotation, for example, but important aspects of the tool (strength, breadth, and depth) were omitted in one school.

d) Test (a), (b) and (c), using an agreed range of evidence sources.

- Various sources were used. As a 'snap-shot' trial, teachers made use of existing knowledge of pupils in many cases.

e) Develop materials for a more extensive Field Trial in Autumn 2011.

- We found that some of the tool's language needs to be made more user-friendly.

The assessment tool itself had a number of requirements that FT1 was designed to trial. Through FT1 we found that the tool:

- Had considerable potential to be useful to teachers;
- Needed to take a lower grain of detail. As it stood it was too unwieldy for teachers to carry out assessment;
- Needed its vocabulary to be more immediately self-explanatory;
- Was clear in its use of adjectives for broad 'traits', and verbal nouns for its sub-habits;
- Was applicable to a broad range of real-world types of creativity (it was trialled by teachers from a range of subject areas);
- Was comprehensive (no missing habits or sub-habits were identified); and
- Was internally coherent, with distinct elements (no overlap was identified).

5.3.2 Recommendations

Detailed below are the recommendations for further trialling beyond FT1. These were based on findings from the reports that schools prepared. In the following sections consideration is not given to the actual form of the second field trial because it was not possible to form the numerous recommendations into a single plan of action. Design of a second field trial, detailed in section 6, was based upon a pragmatic approach that combined as many of these implications as was feasible, at the same time as considering advice from the research steering group.

5.3.2.1 Dimensions

Findings showed that the three dimensions (strength, breadth, and depth) were seen to require excessive data collection by teachers. Findings from FT1 suggested that the conceptual framework should be simplified to increase its manageability and value and, consequently, the extent to which it would be adopted by teachers.

It seemed that 'strength' and 'breadth' were less subjective measures of creativity than 'depth'. Either a pupil 'wondered and questioned' unprompted or they did not (strength). Either they 'challenged assumptions' in science and art, or they only did so in science (breadth). The degree to which they did this 'a little' or 'a lot' (breadth) added a level of complexity, but one that was manageable. On reflection, it appeared that strength and depth could be meaningfully combined to serve as a single dimension of progression.

Findings suggested that if a single strength/depth dimension was trialled it should be re-labelled to ensure its meaning is immediately clear to teachers (and pupils). Teachers told us that 'strength', for example, may be better understood as 'independence'. The 'strength' / 'depth' combination should be given a self-explanatory label or maybe replaced by an exemplar statement. Depth, being a more subjective judgment, might require some exemplification that may involve a moderation exercise.

Findings suggested that breadth could be established through coordination rather than being a distinct measured dimension. Breadth posed some interesting coordination questions:

- Which subject areas should produce assessment sheets for pupils? (all? core subjects only? a school's choice?)

- Who will ensure every teacher required to prepare an assessment sheet has done so? (a coordinator? pupils?)
- Whose responsibility is assessment sheet completion? (the teacher? the pupil?)
- If it is a pupil's responsibility, what incentive would there be to ensure this happened? (linked to reward systems? linked to reporting?).
- Given that the aim of the assessment was not to aggregate scores but to give a full picture of where pupils could become more creative in each subject, would it even be necessary for an overall judgment to be made? Would it be sufficient for pupils to have overall sight of a number of completed assessments and to see which aspects of creativity need to be worked on in which subject areas?

A possible response to these questions might be that the tool itself should not require a 'breadth' judgment. Instead, pupils might be encouraged to perform the assessment across multiple subjects, which would allow them to see for themselves what actions they needed to take in order to develop their creativity in different contexts. This may have further implications for coordination.

5.3.2.2 Coordination

Part response to the need for simplification, and part response to the problem of capturing breadth, the process by which the tool should be used in schools was a continuing concern for further trialling. Issues included:

- What should the role of the learner / teacher be?
- How is the learner / teacher interaction with the tool coordinated?
- How should users be incentivised to complete and use the tool?
- How should the tool be best fitted into existing school structures and process, for example IT infrastructure?

We concluded that further trialling should consider the limited capacity of teachers to perform additional assessments. It might include a streamlined version of the tool for teachers, or a version for learners that involved a 'signing off' role for teachers.

5.3.2.3 Incentivisation

Findings from FT1 raised the question of how teachers and learners may need to be incentivised to use the tool. A possible response could be that its nature as a useful, intuitive, formative assessment tool, justifies its use to pupils and teachers. It might further become part of the school's data collection, reporting, and reward system.

5.3.2.4 The tool

Findings from FT1 gave rise to a number of potential modifications to the tool. These changes related to simplification and clarification. A point raised was that the tool might be designed in such a format that teachers do not need to modify it to the extent that valuable information is lost. For example, one school mentioned changing the habit 'collaborative' to 'team-worker' to suit their preference. If this change was allowed, however, teachers could miss valuable aspects of a collaborator (sometimes it is about seeking help at the right time / from the right place, rather than working as a group).

Findings suggested that a modified tool:

- should have more space for annotation making it useful in any moderation discussions about evidencing;
- should be easily reproducible with larger, clearer graphics and labels;
- should enable teachers to record data for more than one pupil, with one page containing the tool alongside short, clear, listed, instructions;

- should be quick to fill in allowing easy interpretation at-a-glance and ease of comparison; and
- could base its language and appearance on the EYFS framework or the Personal Learning and Thinking Skills (PLTS) framework in order to resemble an extension of these frameworks, to fit in with the current assessment requirements, and to become embedded in schools more readily.

5.3.2.5 Habits

Evidence suggested that the five habits were sufficiently comprehensive and not unwieldy, but that five sets of three sub-habits were too many. A way forward that maintained the framework's aim to be comprehensive might be to maintain all sub-habits within it, but less visibly in order to strike a balance between the inclusiveness of the tool and the need for requiring fewer teacher judgments.

Findings suggested initially that, with assistance from teachers at each key stage, an exemplar statement (see 5.6.2.1) for each habit might be expanded or contracted depending on appropriateness of existing sub-habits to the age of pupils being assessed. The definition of 'inquisitive' for pupils at Key Stage 1, for example, might not include notions of 'challenging assumptions' (one of the three sub-habits trialled in FT1).

With thought from teachers, each set of three sub-habits (or however many sub-habits were agreed to be relevant) might be combined into one overarching description. The description of the habit 'inquisitive', for instance, might be re-written as a single definition to include notions of 'wondering and questioning', 'exploring and investigating' and 'challenging assumptions' (as appropriate to each age group). The description should be written in teacher- and pupil-friendly language.

Findings suggested initially that Key Stage 4 would not be included because of the complexities of trying to compete with examination preparation and assessments. It was considered also that EYFS should not be included because they were already doing this kind of assessment through the EYFS framework, with which our assessment was effectively competing.

5.3.2.6 Progression labels

Evidence suggested that the number of progress levels should be reduced from four to three, to simplify the process of assessment. The labels for progression levels (currently 'awakening', 'accelerating', 'advancer' and 'adept') might become 'a little', 'a fair bit', 'a lot', or similar, the meaning of which was considered to be more immediately obvious to teachers and not to require cross-referencing with a set of definitions. Evidence suggested that an additional progression label 'evidence not yet seen' may remove ambiguity from the recording tool.

5.3.2.7 Communication

Trialling the meaningfulness of the framework's language for learners was not an explicit part of FT1. Some reference was made to learners, particularly at South Dartmoor where the tool was trialled by pupils. Findings suggested that, as a formative learning tool, its future trialling might involve learners being consulted on its form, use, and language.

Findings suggested that clear communication about the formative benefits of mapping each pupil's creativity journey should be included in the instructions for a further trial to help ensure pupil ownership and 'buy-in' to the tool and, therefore, to reduce the burden on teachers. Further, accompanying information might be written to assure teachers that it is acceptable to use multiple and different scenarios to assess, and that they are looking for any evidence that a

habit is developing, rather than creating test conditions for the uniform assessment of pupils.

5.3.2.8 Moderation

Findings from FT1 suggested that further trialling might involve a (number of) moderation session(s) with teachers in order to explore whether it might be possible to take an aspect of creativity (one habit) and reach a consensus about what data they might look at to arrive at a judgment, and whether it might be possible to reach a common 'standardisation'.

A further recommendation related to the importance of considering the need for customisation at school- and teacher-level to make the language meaningful to schools' own contexts.

5.3.2.9 Evidencing

Findings from FT1 suggested that the collection of evidence over time, rather than as an artificial 'snap-shot' would make the process easier.

Findings suggested that if learners are to perform continuing assessments and provide evidence for teachers to 'sign off', the form of evidence (as well as the content of the evidence, possibly determined by moderation) needs to be agreed. Assessments should also be conducted over a period of time so that it is a genuine collection of evidence in real-time rather than an artificial 'snap-shot'.

Teachers suggested that evidence may be collected in tandem with 'learning journeys' or through specific projects. Teachers could be encouraged to test out the tool for a specific unit of work / subject area (e.g. English) over a few weeks.

5.3.2.10 Trial group

The schools involved with FT1 were a willing group of keen teachers from schools already actively trying to promote development of creativity. The

process of trialling the assessment tool was not easy, and teachers highlighted the complexities in their reports. Findings led us to consider the importance for further trialling of a continued relationship with FT1 teachers. Additional involvement could be obtained from 'keen' teachers who attended the Appreciative Inquiry session in May 2011 and responded to a call for assistance.

5.3.3 Steering group guidance

Findings from FT1 justified a second trial; this time with a modified approach, based on preceding recommendations and on discussions from the second steering group meeting held in October 2011. This meeting focused on recommendations for FT1 and a draft amended tool. The draft working document taken to the meeting is shown in Appendix 8.

A key steer from the meeting concerned the continued inclusion of the EYFS for FT2 because of the rich experience of practitioners in noticing creativity at this age range.

A second steer related to defining each of the five habits in an age-specific manner. We sought advice on our initial plan to select only one sub-habit (for each of the five habits) at Key Stage 1; two sub-habits (for each of the five habits) at KS2; and three sub-habits at KS3. Two recommendations led to this decision. One of these related to simplification of the tool in general. The second stemmed from the comments of some teachers of very young pupils, who had questioned the relevance to their children of certain sub-habits. EYFS pupils were said not to 'challenge assumptions' in any noticeable way, for example. The research team planned that the definition of 'inquisitive' for pupils at Key Stage 1, for example, would not include notions of 'challenging assumptions' (one of the three sub-habits trialled in FT1).

In line with a comment at the appreciative inquiry, the steering group felt that any such separation would be arbitrary (done for the sake of simplicity rather than because children do not actually utilise specific habits) and would be debated by teachers. There was also the added complexity that progression in creativity does not seem to be linear. Given that this planned separation also added to the complexity of the tool, the project team agreed to re-draft the tool to remove this distinction between age groups.

A third steer from the group related to the way in which pupils would select the 'level' they felt their creativity justified. The steering group advised that a choice of 'like me' or 'not like me' responses would be easier for pupils to identify with than a number. Following the steering group meeting, FT2 aimed to trial the developed tool. The tool was not designed to be a finished article, but to explore how the changes were received by users.

6 Field Trial 2

6.1 Introduction

Teachers from a mix of 11 primary and secondary schools participated in this trial. Teacher participants trialled a modified tool – this time for pupils to self-assess with – in one of their classes for a period of four to six weeks over the second half of the Autumn term 2011/12. A range of year groups was represented, including Years 2, 4, 6, 8 and 9. For reasons explained in 6.5.8.1, EYFS did not take part.

6.2 Aim, objectives, and research questions

6.2.1 Aim

FT2 aimed to learn the extent to which the tool developed for trial was a practically useful one that both teachers and pupils could understand and use. In particular, it aimed to ascertain:

- The extent to which pupils perceived that they were able to self-assess 'imagination';
- The extent to which pupils were able to provide sufficient supporting evidence; and
- How the tool could be modified, in order to provide direction for development.

The great number of recommendations for development had to be sifted and refined into a triallable tool. At this stage, for example, we anticipated discussing a moderation exercise for providing 'depth' (or level of skill) exemplars, but limited involvement from teachers, and a desire to focus on how

easily pupils (a new variable) were able to self-assess, did not allow for both. In this way, most of FT1's recommendations have been explored further; a few await development.

6.2.2 Objectives

Data capture from the research team was designed to ensure that a number of key objectives were met, which supported the overall research aim. These eight objectives were:

1. To find out how teachers implemented the assessment project in practice, and what 'worked';
2. To find out how the tool helped pupils to develop their imagination;
3. To find out how the act of facilitating pupils to use the tool changed teachers' practice;
4. To ascertain the extent to which pupils perceive they are able to self-assess 'imagination' and provide sufficient supporting evidence;
5. To ascertain whether a consolidated approach to the dimensions 'strength' and 'depth' is sufficiently sharp to capture both aspects;
6. To ascertain whether a consolidated approach to imagination's sub-habits captures all three aspects (the division of each of the five 'habits' into three 'sub-habits' led to an assessment task that proved too onerous for teachers in FT1);
7. To ascertain whether 'breadth' is captured by pupils giving sufficient examples from outside the subject area in which the tool was completed; and
8. To learn how the tool could be developed.

6.2.3 Research questions

Each of the eight objectives gave rise to one or more lines of inquiry, phrased as questions that guided the research or 'research questions'. Appendix 10 shows how the objectives and research questions were linked.

6.3 Research methods

6.3.1 Design

As for FT1, data collection was situated within a case study design, but this time involving twelve schools. As before, both primary and secondary schools were involved.

As with FT1, FT2 was teacher-led, involving design, planning and co-ordination from the project team. This time, however, the trial was broader, requiring pupil involvement and a longer timeframe than the single snapshot specified for FT1. Responsibility for using the tool lay with pupils, with teachers taking a more facilitative role.

6.3.2 Key differences from FT1

Based on recommendations from FT1 and steering group advice:

- Being 'imaginative' was the creativity sub-habit in focus, rather than being 'inquisitive'.
- The assessment tool was simplified in terms of process.
- The assessment tool was simplified in terms of content.
- Assessment was undertaken by pupils, with teachers taking a facilitative 'signing off' role.
- The assessment process was embarked upon over a period of time rather than carried out at a snapshot moment.
- Rather than assessing 'strength' and 'depth' separately, the assessment tool required pupils to compare themselves with a single exemplar statement.

- The ‘breadth’ dimension was accounted for by pupils considering examples and evidence from various contexts rather than as a separate score.
- Key Stage 4 was omitted due to potential conflicts of statutory examinations. Schools were asked to focus on EYFS, Y2, 4, 6, and 8.

The tool is shown in Appendix 9.

6.3.3 Planning

While the tool itself required simplification, careful consideration of the trial process was necessary to ensure plans were feasible and that written instructions accounted for the variety of environments in the very different schools.

A number of complexities were accounted for. Secondary schools, generally speaking, had more complex timetabling. Primary pupils tended to be taught in the same classes for all subjects, with some exceptions. For example, Key Stage 2 maths (primary) was often taught in ability sets, or a modern language was taught by an external teacher. To complicate matters at primary level, many primary classes were taught in split year groups, and/or by job-sharing colleagues. In many cases, therefore, pupils were taught by a number of staff members during the week. We needed to ensure that:

- All teachers to whom trial pupils had exposure during the week were aware of, and supportive of, the trial;
- Within the same school, different pupils were not overloaded with exposure to the trial – of particular concern would be the pupil who had the same project introduced to them by every teacher;
- The reporting tool did not get lost – an electronic tool was not a universal option at this stage and so the tool had to stay within the teacher’s overall control;

- Teachers had a common understanding of the trial; and
- Co-ordination from within schools was minimal.

To meet these requirements, communication material was pre-prepared for a co-ordinator at each school to share with their teacher participants. This included:

- Notes for teacher participants giving clear instructions, and prompts for them to use their discretion at given moments.
- A presentation, with embedded video, designed to be relevant to both teachers and pupils.
- Email templates to share with all teachers that participating pupils would come into contact with during the week.
- Pre-formatted feedback reports.

In the notes to co-ordinators, which outlined their own role, was included a brief summary of the project's purpose, to help them explain in a standardised way to colleagues. Co-ordinators were advised that minimising exposure to the trial for pupils would be achieved if they chose only one subject area. They were sent a Pupil Recording Sheet (the tool) to be copied and used by pupils exactly as it was sent.

6.3.4 Role of participants

Each school identified a **project coordinator** whose job was to:

- Identify teacher participants from within their school;
- Identify any other teachers who would teach pupils in teacher participants' classes at some point each week (more relevant to secondary schools); and, using materials provided, to:
- Communicate the project to these teachers to encourage their active support;

- Explain the purpose of the projects to teacher participants;
- Explain the process of the project to teacher participants; and
- Collate evidence from teacher participants and from a small number of pupils.

Teacher participants at each school were invited to:

- Introduce creativity and imagination to all pupils in their class, explaining that everyone can be creative, and that if pupils learned to notice their own creativity they could get better at being creative. Share our conception of creativity as comprising five habits.
- Introduce the project (the presentation was made available for this purpose) and the idea that pupils were going to learn to get better at noticing (and evidencing) when they are 'being imaginative'.
- Hold 2-3 class sessions with the class prompting them to self-assess using the pre-formatted pupil reporting tool. Ask questions as they look at pupils' self-assessments during the session, in order to prompt reflection and ensure self-assessments are evidenced to the teacher's satisfaction.
- Provide feedback to the project coordinator from themselves and from a small number of pupils.

6.4 Data collection and analysis

6.4.1 Participants

Participating schools are shown in Appendix 1. The table below provides a summary of Appendix 11, which shows data collected from participants.

School	Year groups	Teacher questionnaires	Pupil questionnaires	Reporting tools
Primary				
Cherbourg	2	1	6	6
Oakfield	1/2; 4/5; 5/6	5	14	18
Our Lady of Victories*	2; (N)	2	0	0
Priory*	2; 6	2	12	52
Sandwich	4; 5; 6	6	29	22
5 primary		16 q'naires	61 q'naires	98 tools
Secondary				
Bishop Luffa	8	2	30	30
Eton	9	1	0	6
Ludlow	8	1	10	8
South Dartmoor*	8	3	17	52
Thomas Tallis*	9	1	8	60 (as Excel summary)
Winton*	7	1	3	0
6 secondary		9 q'naires	68 paper	90 paper tools
11 schools		**25 teacher questionnaires**	**129 pupil questionnaires**	**188 paper tools**

Table 2 FT2 Data collected

* 5 of the 11 schools also took part in FT1.

6.4.2 Questionnaires

In order to answer the many research questions (shown fully in Appendix 10) stemming from the eight research objectives, inquiries were made of research participants (both teachers and pupils) through the use of questionnaires as a data collection tool. Appendix 10 also shows how the research questions were broken down into questionnaire questions. Responses to these questions formed the basis of data analysis.

6.4.3 Analysis

Analysis of data from each of the 11 case-study schools was carried out on a case-by-case basis. The structure of the analysis was in line with the eight research objectives. Within each school, each piece of data (teacher and pupil questionnaires) was read for content in context of the other pieces of data from that school so that patterns could be observed.

All questionnaire questions matched one of the eight research objectives. Because respondents typically do not always answer the question exactly as intended, and often give more information than requested, naturally, responses to each of the questionnaire questions had to be examined in light of all eight research objectives. This ensured data capture was full and rigorous.

Chunks of quotation text (questionnaire responses) were grouped together under the relevant research objective. The process was repeated for each teacher. Concurrently, interpretive statements were formulated bringing together similar, or contradictory, quotes and opinions from teachers. The interpretations generated were clear, but did not always show a clean pattern. Some teachers found it easy, some harder, for example. The interpretation stage aimed to shed some light on why and how the contextual variables might have impacted upon how the tool was received and perceived.

The process was also carried out with pupil questionnaires. Because there were more of these, they were read simultaneously and responses to the individual questions were grouped. In this way, we were able to be specific about the number of pupils with a particular view, to help quantify the interpretive comments.

Analysis of the questionnaire data required careful interpretation because teachers' and pupils' responses were sometimes contradictory, either internally or with one another. For example, pupils who told us they found it easy to decide upon and gather evidence may also have expressed an inherent misunderstanding of the concepts in other responses (or indeed in a lack of response to another question), or demonstrated through their completed tools that their evidence was tenuous. Pupils may have stated that they tended to evidence all three areas, while their teachers told us a different story altogether.

With this in mind, analysis looked for patterns and themes across all responses, rather than totalling up the volume of each type of reply to questions. We did not intend to paint a quantitative categorisation of respondents' views, because individuals' interpretations of 'easy' or 'difficult' is governed by a multitude of factors peculiar to their own lived experience, understanding of the concepts, and ability to make reasonable self-informed judgments. Where it was possible to use numbers in the analysis, they give the reader a feeling of the scope and weight of interpretive statements. As we are trying to understand and interpret meaning, it is of more interest to us that a pupil did not understand a particular question, than it would be to simply give a table showing number of each type of response.

Finally, case studies were brought together in a cross-case interpretation of the 'bigger picture' and this summary is shown in 6.5.

6.5 Findings

This summary lays out findings under each of the eight research objectives for Field Trial 2 in turn.

6.5.1 Objective 1 To find out how teachers implemented the assessment project in practice, and what 'worked'.

We aimed to find out what teachers did that worked particularly well. We found that teachers implemented the project in a variety of ways, generally following the guidelines given by the project team. In four of the 11 schools, project co-ordinators and teachers took the decision to amend the tool in some way. Changes varied from simple formatting (online, enlarged sheet, or different font) to a more substantive change (removal of definition and exemplar statement; use of an 'imagination 'log' throughout the trial, with the tool used at the beginning and the end only; addition of numbers / smiley faces / stars). When we visited Cherbourg, they told us that there had been much discussion about how they could 'tweak' the tool but they resisted upon re-reading the guidance. FAQs advised co-ordinators that 'the wording on the recording sheet has been considered carefully. If you wish to transfer the tool into an electronic format for pupils to complete, please ensure that the full definition and full exemplar statement remain unchanged'.

Most teachers showed the presentation and video, which were received warmly by pupils (with the exception of one group, where the school's technology did not work). Many pupils were given the opportunity to develop their own definitions of imagination through various means including discussion, mind-mapping, and blogging.

The clear and broad definition of what it meant to be imaginative was commented on positively, particularly because it gave teachers and pupils something solid to refer back to when reflecting upon how they had been imaginative. Although the definition was not universally favoured – pupils at one school found it hard to change their view that creativity was different for everyone – being able to refer to the definition was nevertheless useful.

Some teachers linked the introduction session explicitly to the piece of work the class would tackle that lesson. In Eton's History class, for example, a discussion was held to develop the class's awareness of the role of creativity in History. In South Dartmoor, the Religious Studies teacher used the introduction as a way of bringing in the consideration of thinking skills to a topic containing 'big' philosophical ideas.

Assistance for teachers from colleagues, including Teaching Assistants and other teachers who had timetabled contact time with their pupils each week, was valued. It allowed pupils who were struggling to come up with ideas to have some additional encouragement and support.

Reflecting and discussing with peers was said in two schools to be more popular than noting experiences down. If the tool is to be used as a record, rather than a prompt, its use is in allowing teachers to look at it at their leisure, and in helping pupils remember what they wrote. This is only of use if teachers look at the tools, and indeed, if pupils return to them in future. With the wordy responses some pupils and teachers wanted room for, it is questionable whether either of these things would happen regularly and sufficiently to warrant providing masses of room, or even a requirement to record anything in writing.

6.5.2 Objective 2 To find out how the tool helped pupils to develop their imagination.

We aimed to find out how the tool had worked to develop the imagination of pupils. As was hoped, the reporting tool developed understanding of its key words and concepts in most pupils. Having used the tool, pupils were overwhelmingly more aware of when they were being imaginative; many were also seeking actively for opportunities to be more so.

Those who claimed that the tool had not made them more aware fell broadly into two categories. Some believed that they had sufficient awareness anyway and did not feel that the tool enhanced this. Others showed that they held onto their original views that creativity and imagination could not be taught; that they were unable to be imaginative; or that creativity had too many meanings to try to define it. In one school in particular, pupils' responses indicated a lack of sufficient contact time with the tool, but also that initial input from teachers had not been sufficient to develop their understanding. It is to be expected that these factors would be concurrent with a narrow view of what it means to be imaginative. In another secondary school, a teacher told us that pupils still sometimes associated 'creativity' too readily with 'making'.

6.5.3 Objective 3 To find out how the act of facilitating pupils to use the tool changed teachers' practice.

We aimed to find out whether the teachers trialling the tool had made any changes to their practice as a result. The majority of teachers involved with the trial told us that their experiences with it had impacted positively upon their practice, with the caveat from one enthusiastic teacher that she had not had time to explore fully the impacts of the project. Three teachers talked of how the trial had broadened their awareness of creativity – the different forms it takes and places it emerges – and helped them to value and celebrate it.

Another told us how she had benefited from the narrow focus on just one aspect of creativity and planned to continue this focus by looking at a small number of 'skills' on a half-termly basis.

Of those who did not tell us there had been a marked impact upon their practice, one was not forthcoming about changes, another reflected upon the trial as affirmation of his views about the importance of teaching a more expansive curriculum to develop pupils' 'learning power' and meta-cognition. Two were explicit about plans to continue with the tool.

At five schools, teachers talked about impacts of the trial on their practice. They told us they would be listening to pupils more and (questioning them more) in order to notice imaginative behaviour, giving more praise and encouragement of pupils; allowing more time for reflection, and spending more time planning for imagination. Planning opportunities for imagination into lessons and into wider schemes-of-work was the most common change teachers mentioned.

6.5.4 Objective 4 To ascertain the extent to which teachers and pupils perceived that pupils were able to self-assess 'imagination', providing sufficient supporting evidence.

We aimed to learn whether pupils were able to self-assess using the tool. The vast majority of pupils told us that they found the tool easy to use and evidence easy to gather. Comments at five schools told us that using the tool became easier to use as it became more familiar.

The quality of self-assessments varied. Some pupils simply listed work they had done or, more broadly, lessons they had been present in, where they had used their imagination. Detail was sparse and insufficient for teachers to give

guidance for improvement to these pupils. Others gave much more detail. A secondary school teacher observed that pupils tended to give the same sort of positive, fairly modest, self-assessment as one another. Similarly in a primary school some pupils tended to be keen to show themselves in a positive light, whatever the reality, being unable to reflect critically. Others were more negative than the teacher felt was justified. Year 2 pupils in another school were said to struggle with the concept of self-assessment. They were unable to determine which of the tool's 'like me' statements was appropriate, or relate its exemplar statement to their own actions.

Similarly in a school where it was most evident that both teachers and pupils needed further guidance, pupils responded, almost unanimously, that the tool was easy to use. It is fairly likely that feedback from these pupils did not fully reflect the difficulties they had in evidencing their imagination. The Year 2 teacher told us that pupils tended to stick to their very subjective opinion about their own abilities because the concepts were too abstract for them to grasp.

On the whole, teachers were satisfied that evidence was reasonably justifiable and appropriate. Evidence tended to be better when it was concrete and sufficiently detailed, although a primary teacher told us that she found verbal evidence easier to agree with because pupils were able to articulate better verbally than in writing. Evidence from lessons other than the teacher's own was harder to judge.

Pupils often mentioned how much easier it was to gather evidence in certain subjects, where they felt that their creativity was used more naturally, or where they were familiar with using their imagination in the way they had always understood imagination to mean.

Difficulties some pupils had related to: finding examples of when they had been imaginative, relating their examples to the exemplar statement, finding 'hard' evidence, and deciding which of the 'like me' statements their evidence suggested they should tick. Putting thoughts into writing (particularly if pupils had limited vocabulary) was the most commonly expressed of all these issues, although several of the mentions were by pupils who claimed to find the tool easy to use. This suggests that it was only a minor issue for these pupils. In the school in which it was cited most frequently (by 15 pupils), the teacher only considered recording evidence to be an issue for the less able children.

In two schools reflecting and discussing with peers was more popular than noting experiences down while some pupils tried to include too much detail on their reporting sheet.

A common theme was that maths posed some challenges. The teaching had to be conducive to pupils' using their imagination. Pupils also needed confidence to believe they could be imaginative (particularly the girls). They further needed hard evidence, which they felt was less easy to get from looking at a piece of maths work. Pupils in one maths teachers' class claimed that the class did find it easier with practice.

6.5.5 Objective 5 To ascertain whether a consolidated approach to the dimensions 'strength' and 'depth' is sufficiently sharp to capture both aspects.

Our approach to 'strength' and 'depth' involved the following criteria attached to the exemplar statement: '…I can do these things without being prompted. I am confident about doing these things'. Following FT1, 'strength' was replaced with the more transparent idea of 'independence'; the idea of being able to do things without being prompted. Confidence was used as a proxy for 'depth'.

This consolidated approach to tracking strength and depth was only apparently successful at those schools where the tool was viewed as entirely unproblematic. At Eton and Winton, and one class at South Dartmoor, teachers were satisfied that pupils who understood the requirement had no problem paying attention to both. At seven of the other schools, teachers themselves did not provide us with feedback relating to this specific question, suggesting strongly that the consolidated approach was too subtle or intangible for them to notice.

6.5.6 Objective 6 To ascertain whether a consolidated approach to imagination's sub-habits captures all three aspects

Our approach to the three sub-habits of 'being imaginative' was to develop a combined exemplar statement that described what it would look like if an individual was doing all three well.

Pupils varied in the degree to which they evidenced one, two, or three sub-habits. In some instances pupils did not comprehend the question we asked regarding the number of sub-habits they had attempted to evidence. This suggested that the consolidated approach was not sufficiently directive for some. Because they were given one space for evidencing all three sub-habits, any 'gaps' were less visible to them.

Of the three sub-habits, if one was given slightly more attention by those telling us what they found difficult, it was 'intuition' (being able to carry on even when you can't fully explain your reasoning). This said, difficulties with intuition were mentioned only infrequently. Not a familiar word to begin with, it became more so with practice and also with hindsight. Some found it less easy to notice when they themselves were being intuitive, although teachers told us pupils did use their own intuition. It is quite possible that the problem with intuition (if indeed

there really was one) may not have been the wording, because teachers would have used different words to explain what it meant, but the concept itself. Intuition was perhaps inherently difficulty to notice and, therefore, to evidence. As it was so intangible it was also harder to write about, even when noticed.

Teachers at two schools both expressed a preference to focus on capturing evidence for only one-sub habit at a time.

6.5.7 Objective 7 To ascertain whether 'breadth' is captured by pupils giving sufficient examples from outside the subject area in which the tool was completed.

Our approach to 'breadth' involved instructing participating teachers to allow pupils to bring in evidence from other lessons as well as their own. Pupils indicated to us whether they had drawn upon a single subject only, a narrow range of subjects, a broad range, or a broad range plus out of school examples. The range of subjects that examples were drawn from was used as a proxy for breadth.

At this stage in the development of the tool, pupils were not led by the research team or teachers to be systematic about collecting their evidence and only around a dozen mentioned out-of-school evidence. This was expected, given the arrangement whereby pupils did this work with only one teacher. The trial was to see whether pupils *could* refer to other subjects. A common theme in this regard was selectivity, with the most overtly 'creative' subjects being considered more readily by some. The view that some subjects did not require creativity at all was put forward by one pupil from a school in which it was clear that pupils were not sufficiently informed about the field trial.

Remembering contexts outside of pupils' immediate experience was a problem for a few pupils; for some, even recalling what they had done earlier in the lesson in which they were reflecting was a challenge. Subject silos also kept pupils' minds confined to the subject in which they were working, to some degree. This suggested that a method of capturing thoughts that worked on the spot may have been more successful.

6.5.8 Objective 8 To learn how the tool could be developed

This final objective was also the most significant. It aimed to help us understand the extent to which development of this tool could be useful, and the direction in which this development effort would be most beneficially expended.

At a number of levels, we were able to claim proof of concept for this early prototype of what might become a useful tool for formative development of creativity:

- Use of the tool highlighted areas for change in teachers' practice.
- It helped teachers to put together creative lessons.
- It validated pupils' creative approaches to problem solving. The focus on creativity gave pupils confidence to take risks.
- It confirmed to teachers the importance of valuing and, with the exception of only one teacher, tracking creativity.
- It gave teachers valuable one-to-one or small group time with pupils
- It highlighted areas of the curriculum where pupils were not being given sufficient opportunity to use and develop their imagination.
- It taught the majority of pupils things they did not know about what it meant to be imaginative.
- It surprised many of them with the revelation that they were creative, and that creativity was not confined to certain subject areas.
- It gave pupils confidence to talk about their own use of imagination.

- It developed in pupils a willing disposition to be reflective and critique their own work
- It prompted many pupils to be alert for opportunities to use their imagination.
- It stretched pupils to understand and use new words. An expanded vocabulary gave pupils new ways to express complex experiences.
- It gave pupils the opportunity to listen to, and utilise ideas from, one another.

As a progression framework, the tool was in its very early stages of development. The trial represented a move from a tightly separated set of 15 sub-habits with three measures for each at four levels (180 options) to a much looser reporting structure of five habits with four tick boxes for each (20 options). Having tried the two ends of the spectrum, a move to a possible middle ground remaines untested.

Other areas for consideration that arose from findings are explored below. These were:

- Developing training materials
  - For communicating the purpose
  - For linking evidence to the exemplar statement
  - For demonstrating level of detail required
  - For preparing very young pupils
- Developing layout
- Scrutinising language
- Developing best practice: focus
- Developing a more formative tool
- Capturing ‘breadth’

- Developing a more systematic evidence collection process
- Developing the format of the tool: online

6.5.8.1 Developing training materials

The most common developmental theme to emerge across case studies (with specific comments from eight of the 11 schools) was the need to develop training materials.

(a) for communicating the purpose

Resources would additionally exemplify how teachers should communicate the vision and purpose of the tool to pupils. The importance of clarity with regard to purpose was particularly important where pupils had special needs or were learning English as a second language. It was clear from pupil responses at one school in particular that their confusion about what to do with the tool stemmed from a lack of understanding of the concepts as well as a lack of awareness about the tool's purpose. For others already familiar with 'creativity', FT2's focus on just one element (the habit 'imaginative') confused them. Part of the tool's development should involve a clear contextualisation of each of the habits into the bigger picture. Accompanying visual displays could be one means of achieving this.

(b) for linking evidence to the exemplar statement

A list of possible evidence sources was not sufficiently tangible for teachers (and pupils) to grasp how the reporting might best work in practice. Developmental work could profitably be carried out producing a very practical series of clear, step-by-step, pictorial guides to translating a concrete piece of evidence into an entry against the exemplar statement. The format that this entry might take, whether physical evidence (annotated perhaps) or reference to it, would be demonstrated through numerous examples.

(c) for demonstrating level of detail required

Materials for teachers would also include clear guidance about the level of depth required in pupils' evidence, and what this might look like in practice. Pupils often tried to include too much detail on their reporting sheet, and saw the solution to this as provision of extra space or clearly indicated lines or boxes for writing in. For a formative tool to map progression, however, the question has to be posed concerning the usefulness of this level of detail. A certain level of relevant detail was, of course, helpful in ensuring teachers understand pupils' evidence. Reams of descriptive, uncritical narrative were unlikely to have been read and absorbed by teachers with a view to assisting in the formation of deeper levels of creativity, however. They were even less likely to be drawn on by pupils as they hit problems in the future or wished to reflect and decide upon their own personal development targets.

(d) for preparing very young pupils

Our initial decision to omit EYFS from FT2 was supported by comments from two schools who had been involved in FT1. Although invited to take part in FT2 following our steering group meeting, one headteacher told us that the very limited language, comprehension, and mark-making skills of children at this age meant that our approach to FT2 was unsuitable for self-assessment by pupils. Similar comments came from another EYFS teacher. For the same reasons, her primary school participated in FT2 at Year 2 only. Rather than attempting to develop a version of the tool that could be used by teachers at EYFS as well as by pupils at all other age groups, development at EYFS might reasonably be focused on generating awareness of the vocabulary and its meaning that young children need as they move into Key Stages 1 and 2.

6.5.8.2 Developing layout

Comments ranged from indicating that changes to the layout of the tool should be considered, to uncertainty about how to attach or refer to evidence. Developmental work might attend to these issues by clarifying how the space should be utilised.

As mentioned, a few pupils wanted more space to write long anecdotes, repeating what was in their journals. Some wanted clearly defined spaces for evidence. The 'imagination journal' two schools ran alongside the tool, while helpful in jogging pupils' memories, led to an information overload. Several pupils in one class commented on having too much choice of evidence (by which they meant anecdotes from the journal rather than material evidence).

A suggestion arose that the exemplar statement should be split into three statements. This originated in a school where pupils believed that they had too much evidence, yet insufficient space to record. Although this suggestion was made with a view to providing pupils with more space, rather than to provide a tighter focus, the tool could, nevertheless, benefit from a degree of simplification. A compromise would be to atomise each habit's exemplar statement into three exemplar statements; one for each sub-habit. This compromise would lead to a greater number of exemplar statements (from five to 15), but each statement would be more brief, and allow more space for recording.

Tool development could further involve a means of recording evidence for each of the 15 sub-habits in a separate place. Pupils could have sight of these at different times of the year so as not to overload them.

6.5.8.3 Scrutinising language

The language used was broadly understood and helpful in developing pupils' vocabulary. Many pupils responded positively to the language used, and others did not take up the opportunity offered to tell us of difficulties. Sufficient numbers of comments were made, particularly by teachers, to indicate that the language used within the framework and the tool itself requires further expert scrutiny as the tool is developed for wider dissemination, particularly to those schools less familiar with assessing creativity. 'Combining' (facts and ideas) and 'intuition' were identified as problematic. It is important to note here that the problem with 'intuition' may not stem purely from the language used (as discussed in section 6.5.6). Teachers, as expert practitioners, explained intuition in a variety of ways. Nevertheless, it was one of the habits pupils often found harder to notice.

6.5.8.4 Developing best practice: focus

Although we trialled just one sub-habit, it was intended that beyond prototyping, all five habits would be assessed in classrooms. It was drawn to our attention that the narrow focus on just one habit was a good thing, however. A fruitful direction for tool development could be to construct a package that makes it easy for teachers to tackle one habit over a period of time.

The idea that evidence gathering should be restricted to one particular project, or even to one particular piece of work, was not commonly mentioned. By focusing on a single piece of work pupils at one school were able to reflect on the quality of their learning in some considerable depth as they developed one essay over time. This idea may prove to be part of the solution to two development considerations the tool currently has: firstly of selectivity, and secondly of formative usefulness. An iterative approach to evidencing progression might see pupils returning to the tool repeatedly as they develop a

piece of work, with a sense of focus in their evidence gathering rather than the piecemeal, selective, approach of FT2.

6.5.8.5 Developing a more formative tool

As a formative tool the reporting sheet was in need of development and fine-tuning. The practice of using the tool began a nascent pattern of thinking, in many pupils, of considering activities and actions to be imaginative when previously they would not have identified them as such.

The requirement to evidence past activities did not yet pose the question: how could you do this better and in a more creative way next time? Indeed, the goal of our continuing endeavour was that the tool might assist pupils in developing sub-habits in a deeper, broader, stronger way. It might achieve this by helping them to decide upon specific actions: for incorporating more nuanced expression of a sub-habit into their thinking and action (depth), or for using sub-habits in a new or more complex context (breadth). Further development might involve considering the use of each form of evidence, and particularly how they might be used formatively.

The journey to create a formatively useful tool for teachers and pupils might beneficially incorporate guidance for how teachers could plan its utilisation into lessons.

The tool might be developed to incorporate a more formalised element of peer discussion or assessment. Only two schools commented on finding peer assessments useful. Although nobody knew pupils quite as well as they knew themselves, assessment by peers seemed less boastful than self-assessment to pupils in some cases.

6.5.8.6 Capturing 'breadth'

Although a few teachers talked of receiving support from other members of staff, this tended to be classroom assistants. In one instance only was this help manifest through evidence being provided from another classroom. Limited interactions between teachers from different subject areas meant each was unaware of the other's teaching agenda. Unless evidence was particularly concrete, teachers had to take pupils at their word when evidence was given from other lessons.

Although appealing from an administration perspective (only one teacher needed to be involved), and useful as a proof of concept (we know that pupils were able to consider a range of contexts), there were some limitations of confining this assessment exercise to one context alone.

- Firstly, meaningful assessment of creativity in those other contexts did not occur. Pupils produced evidence selectively, taking an unstructured approach to seeking support for their self-assessment and produced a snapshot of some things they did well. Nobody did anything with the information, or could confirm its truth value.
- Secondly, and related to this, pupils did not always (if ever) transfer their reflections in one context back into learning in another.
- Thirdly, the information did not make its way to other subject teachers. This meant that potentially useful feedback about where certain subjects, lessons, or projects failed to provide sufficient opportunities for creativity to develop failed to reach those teachers who needed to receive it. Teachers were unable to discuss specific goals, relating them to particular forthcoming pieces of work with pupils.

Future development work should focus on how to achieve a balance between the low administrative burden implicit in involvement of only one teacher, and the broader reach of developing a tool that could be used across the curriculum.

While we have established proof of concept that the tool could be used in more than one context, we would need to establish how the tool could be used in multiple contexts, and whether there would be any issues of ultimate ownership.

6.5.8.7 Developing a more systematic evidence collection process

Pupils were selective about which subjects they took evidence from, choosing not to comment about certain lessons. For example, some lessons were perceived by pupils to be more 'creative' because they involved an element of design or production of artifacts that they could draw evidence from easily. Pupils' selectivity also reflected a perceived lack of opportunity to demonstrate creativity in certain lessons. A focus group with pupils in one school highlighted to us how very different two classes' experiences of maths were because they had different teachers. One teacher gave the class principles and information, then freedom and time to solve a problem, before bringing them together and showing how to tackle the problem better next time. The other teacher gave the class worksheets. Even if pupils could use their imagination to solve worksheet problems, the format did not encourage it. Development of the progression framework might involve developing materials to tackle teachers' thinking about the opportunities they provide in the curriculum.

6.5.8.8 Developing the format of the tool: online

Two schools reported back positively about how they had used their internal electronic networks to assist with evidence collection. Although it was not intended that the tool be accessed by pupils electronically at this stage, this is inevitably the direction in which development would take this work. The ability to scan and annotate evidence then link it electronically to a reporting tool would remove the need for paper copies, prevent loss of data, and bring other benefits of using electronic media such as easy access by multiple users.

6.6 Summary and implications of FT2

Our experience of FT2 taught us that it would certainly be worth developing the tool. It had significant impact upon pupil understanding of important learning concepts, upon their vocabulary, and upon teachers' professional practice.

Further developmental work is proposed in a number of areas. Most significantly: accompanying training materials are needed in order to maximise fully the benefits of tracking creativity in classes; and the tool should be more formatively useful. Teachers and pupils need detailed exemplars and clear guidance about how best to utilise the tool to ensure that evidence is always pointing pupils' development on an upward trajectory.

Issues of incentivisation remain. How do we ensure the tool becomes part of the schools' data collection, reporting, and reward system? To what extent is this necessary? How could technology such as RealSmart or PebblePad assist with this? Issues of moderation remain. How do we ensure teachers and pupils share a common understanding of the key terms? How might we use moderation to develop some exemplar pieces of evidence? How critical are these questions?

For future development, however, we believe the tool's most useful direction is as a formative instrument for pupils and teachers to concentrate on action for the future, rather than as a record of past achievement.

7 Conclusions, recommendations, next steps

Given an iterative research and development approach, most of the recommendations arise, naturally, and most powerfully, from Field Trial 2. Particular issues around the appearance and construction of an assessment tool were important:

- The balance of simplicity and rigour is important. This project has attempted to span the gap between theory and practice, and has found that teachers will only use a tool that obtains this balance.
- The use of five habits is sufficiently detailed without being too unwieldy. The five habits we trialled were validated by practitioners and pupils.

Regarding the purpose of such an assessment tool, while appreciative of our attempts to unpack creativity in terms of a number of constituent dispositions, it was clear from the research just how strongly teachers were averse to the idea of grading or labelling pupils regarding their creativity.

We found a range of benefits of using the assessment tool. These related to:

1. The potentially powerful use of feedback material for formative use by pupils;
2. The additional focus and precision which our research-informed synthesis of five dispositions afforded teachers in their classroom activities;

3. The influence of the tool on teachers, and its help in refining their practice, helping them to think specifically how they could cultivate the full range of creative dispositions; and
4. The boost to the status of creativity afforded by our clarification and refining of a practically useful definition of creativity for those trying to argue its case. This is particularly pertinent in the current educational landscape as many 'creative' subjects are not to be found in the EBacc. A more precise, research-led definition could be helpful in countering potentially negative impacts of a narrower curriculum upon creativity.

In terms of what the assessment tool might look like in light of the above, and drawing specifically from FT2's development, we recommend the following approaches:

- Maintaining the emphasis upon the learnability of creativity. The steering group was strongly in support of our decision to emphasise this aspect, and also that of sociability.
- Incorporating the tool into the school's data collection, reporting, and reward systems.
- Developing training materials and resources for teachers to demonstrate best practice, making the assessment process more tangible for teachers. Materials might relate to:
    - communicating the purpose
    - linking evidence to the exemplar statement
    - demonstrating the level of detail required
    - preparing very young pupils
- Developing layout to separate back out the three sub-habits of each creativity habit.
- Use of a clear font; easily decipherable by the youngest pupils.

- Scrutinising language to ensure it is sufficiently clear, particularly for younger children and those with special needs, but also those less familiar with creativity or learning vocabulary. This may mean creating different versions of the tool for different age groups, although comments did not justify this as a definitive course of action.
- Developing best practice relating to how teachers might choose to focus on a small aspect of the tool at a time.
- Developing a more formative tool that prompts pupils and teachers to consider how they could improve, rather than just logging past behaviour. From a practical point of view, at present, the tool does not allow room for capturing progression adequately due to lack of space. Some pupils did date their notes, which showed progression to a small degree. Separation of the sub-habits would allow more focused notes on progression.
- Capturing 'breadth' more systematically in the tool, by establishing how it could be used in multiple contexts, and whether there would be any issues of ultimate ownership. This may involve exploring how schools best deal with the issue of coordination to ensure that assessments are undertaken systematically and collated in a useful format for both learners and teachers to use formatively. For example, schools may need to assign a coordinator role to ensure that assessments are undertaken. This role may fall naturally to the 'assessment coordinator' at primary level.
- Developing a more systematic evidence collection process. Developing materials to tackle teachers' thinking about the opportunities they provide in the curriculum.
- Developing the tool for the virtual environment.
- Trialling the tool with the 'unconverted'. In light of the fact that participating schools were a self-selecting group of 'keen' practitioners, the tool is yet to be exposed to the 'unconverted'. Its introduction to a group of schools unfamiliar with assessment of creativity would further

test its practicality and utility. Given its non-statutory status, however, it could be that it would be better to focus on those schools which actively want to explore creativity.

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Appendix 1: List of research participants

Interviewees

Our grateful thanks to the following individuals, interviewed for this project:

Nursery

McMillan Nursery School, Hull

Andrew Shimmin (Headteacher)

Primary

Our Lady of Victories Catholic Primary School, Keighley, West Yorkshire

John Devlin (Headteacher) and Katie Royston (Co-ordinator)

Secondary

Queensbridge School, Birmingham

Helen Reeves (Headteacher)

Winton School, Andover, Hampshire

Chris McShane (Headteacher)

The Green School, Isleworth, London

Audrey Douglas (Co-ordinator)

Durrington High School, Worthing, West Sussex

Gail Christie (Co-ordinator)

Special

Rosehill School, Nottingham

Andy Sloan (Headteacher)

Schools

Field Trial 1

Primary

McMillan Nursery School - Nursery School of Creativity

Our Lady of Victories Catholic Primary School - Primary School of Creativity

Priory School - Primary School of Creativity

Secondary

The Green School - Secondary School of Creativity

Winton School

South Dartmoor Community College - Secondary School of Creativity

Field Trial 2

Primary

Cherbourg Primary School

Oakfield C of E (Aided) Primary School

Our Lady of Victories Catholic Primary School - Primary School of Creativity

Priory School - Primary School of Creativity

Sandwich Junior School

Secondary

Bishop Luffa School

Eton College

Ludlow CE School Specialist Technology and Sports College

South Dartmoor Community College - Secondary School of Creativity

Thomas Tallis School - designated Secondary School of Creativity

Winton School

Appendix 2: Steering group members and research team

Steering group

- Dr Francesco Avvisati, OECD/CERI
- Paul Collard, CCE
- Professor Anna Craft, University of Exeter
- Dr David Parker, CCE
- Naranee Ruthra-Rajan, CCE
- Professor Julian Sefton-Green, LSE, University of London
- Jo Trowsdale, Cre8us
- Stephan Vincent-Lancrin OECD/CERI

CRL research team

- Professor Guy Claxton
- Professor Bill Lucas
- Dr Ellen Spencer

Appendix 3: Interview schedule

About your experience of assessing creativity in children

Name, position, school contact details

1. Please describe your experiences of developing creativity in schools

2. To date have you assessed progress in the development of creativity in children? (Yes/No, if Yes, probe. What tools have worked well? What less well? Do you have an overall framework? If so, describe. How was it done? Who did it? Which subjects? etc)

3. What lessons have you drawn from your experiences of assessing creativity in children?

4. What other assessment of creativity materials are you aware of?

About the possibility of creating an assessment 'framework' for 'measuring' the development of creativity in children

5. Do you think it is desirable to try and create an assessment 'framework'. Probe

6. Do you think the creation of an assessment 'framework' is achievable? Probe

7. If created, to what extent should the assessment 'framework' be formative and/or summative? Probe whether in addition to potential formative use it should seek to produce 'scores' (in whatever form) measuring aspects of creativity

8. Should any assessment 'framework' be used outside school or just within schools? Probe

About possible involvement in the project

9. Would you be willing to be a field test school in the second half of the Summer term? If so, who would coordinate this?

10. Is there anything else you can tell us about this subject that might be helpful?

Appendix 4: FT1 Habit and sub-habits

1. Inquisitive

Powerful and creative learners have a curious attitude to the world. They engage with what's around them in an interested and thoughtful way. They are not afraid to say 'I don't know, but I'd like to find out' and 'That's interesting; what happens if…'. Whatever they are told, they are inclined to want to go further or deeper.

Wondering and Questioning

Being inquisitive means asking questions. It means saying 'I wonder why...?' and asking 'How come?' and 'Why's that?' It means taking your own questions seriously and not being afraid to voice them. It means having your own pile of things you really want to find out about, or get better at, and not just responding to the suggestions or demands that come from outside.

Exploring and Investigating

Being inquisitive means following up your questions by going out and finding out more. It's about being curious; constantly wanting to find things out. It means taking charge of the 'agenda' of learning and being proactive in pursuing your interests. It means asking questions of others as well as of yourself. It means enjoying adventures - physical or mental - where you don't quite know what is going to happen.

Challenging assumptions

Being inquisitive means not taking things at face value. It means saying 'Hold on a minute...' and asking 'What does that mean?' and 'How do we know...?' It means noticing anomalies and inconsistencies, and being willing to unearth the assumptions behind what people may be saying or doing. It means having a healthy degree of scepticism towards what you see, or what you are being told.

Appendix 5: FT1 Participants and data

School	Year Group / Subject (Number of teachers)	Number of Pupils	Number of assessment tools completed
Priory	N / General (1) 3 / General (1) 5 / General (1)	4 pupils 4 pupils 5 pupils	4 grids, 1 circle 4 grids 5 grids
Green	Per Green's report: 10 / English (4) 10 / Maths (5) 10 / Science (5) 10 / Arts (4) 7 / English (4) 7 / Maths (5) 7 / Science (5) 7 / Arts (3)	Data actually received (year groups not specified): English: 6 teachers; 14 pupils Maths: 7 teachers; 15 pupils Science: 4 teachers; 12 pupils P.E.: 3 teachers; 11 pupils	12 circles (Science) 11 circles (PE) 15 circles (Maths) 14 circles (English)
Winton	7 / Evolve (1) 7 / English (1) 7 / Drama (1) 7 / Maths (1)	Evolve: Y7: 6 pupils Drama: Y10: 6 pupils Y9: 6 pupils Y7: 6 pupils Maths: Y10: 6 pupils Y9: 6 pupils Y?: 5 pupils English: Y10: 6 pupils Y9: 3 pupils	6 circles (Evolve) 18 circles (Drama) 17 circles (Maths) 9 circles (English)
Our Lady of Victory	5 / General (2) 3 / General (1)	6 pupils 6 pupils	6 circles, 2 grids 6 circles

	R / General (1) N / General (1)	6 pupils 6 pupils	6 circles, 1 grid 6 circles, 1 grid
McMillan	N (3)	4 pupils	6 grids
South Dartmoor	13 / Photography (1)	6 pupils	6 circles, 6 circles(pupil), 6 grids(pupil)
	10 / Dance (2)	3 pupils	3 grids, 3 circles
	12/13 Dance (2)	3 pupils	3 grids, 3 circles, 5 grids(pupil), 5 circles(pupil)
	9 / Maths(3)	6 pupils	6 circles(pupil), 1 grid (pupil)
	10 / Graphics (4)	6 pupils	6 circles
	10 / PE (5)	6 pupils	4 grids, 2 circles
	11 / RS (6)	6 pupils	6 grids, 6 circles
	9 / English (7)	5 pupils	5 grids, 5 circles
	8 / Technology (8)	4 pupils	2 grids
	10 / Technology (8)	2 pupils	2 circles, 3 grids

Appendix 6: FT1 Notes to teachers

This project explores how we might monitor progress of creativity in pupils. For this short pilot study, we are asking you to:

- Focus on 6-12 pupils only in the years we specified
- Attempt to map each child's profile at a single moment in time
- Tell us what worked and what didn't in trying to do this

We want to understand:

- How easily you are able to map a pupil onto our framework
- How easily you are able to decide on, and gather, suitable decision-making evidence/data
- What the sticking points are in the process we are asking you to try
- How we could improve this process

Our creativity framework breaks creativity down into 5 'habits', each with 3 'sub-habits'. Each of these sub-habits can become:

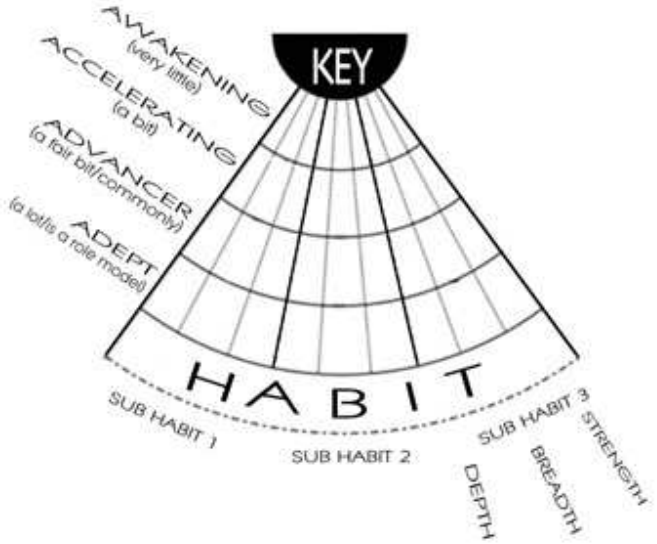
- Stronger (pupil requires less support and prompting to show sub-habit)
- Broader (pupil shows sub-habit in a range of activities and areas)
- Deeper (pupil's use of sub-habit becomes more skilful and complex)

For this short pilot we will look at 1 habit only (INQUISITIVE) with its three sub-habits:

- wondering and questioning
- exploring and investigating
- challenging assumptions

On a day of your choosing, please attempt to quantify 'strength', 'breadth', and 'depth' of each of the three aspects of pupils' inquisitiveness, at that time, on our two recording sheets. The whole framework is shown on the next page.


USING INTUITION
WONDERING & QUESTIONING
EXPLORING & INVESTIGATING
CHALLENGING ASSUMPTIONS
TOLERATING UNCERTAINTY
STICKING WITH DIFFICULTY
DARING TO BE DIFFERENT
SHARING THE 'PRODUCT'
GIVING & RECEIVING FEEDBACK
COOPERATING APPROPRIATELY
REFLECTING CRITICALLY
DEVELOPING TECHNIQUES
CRAFTING & IMPROVING
PLAYING WITH POSSIBILITIES
MAKING CONNECTIONS
IMAGINATIVE
INQUISITIVE
PERSISTENT
COLLABORATIVE
DISCIPLINED


KEY
AWAKENING (very little)
ACCELERATING (a bit)
ADVANCER (a fair bit/commonly)
ADEPT (a lot/is a role model)
HABIT
SUB HABIT 1
SUB HABIT 2
SUB HABIT 3
STRENGTH
BREADTH
DEPTH

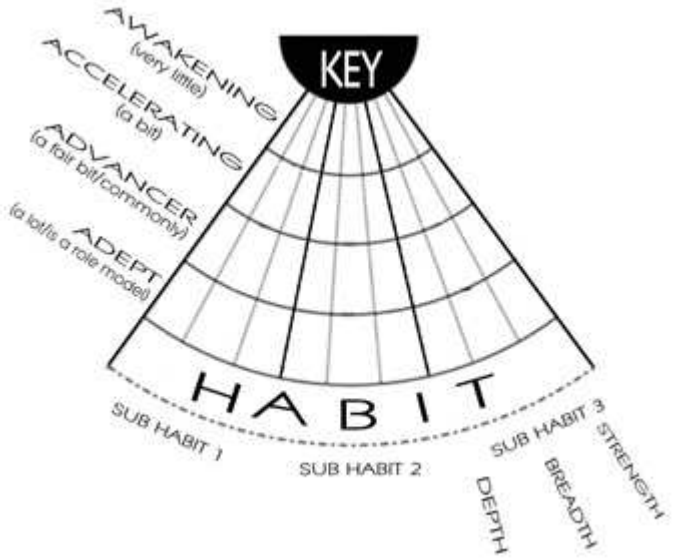
- We are only going to look at the habit ‘inquisitive’. Please look at the two recording sheets below, which we will ask you to compare.
- For the first pupil please identify (**on both of the two recording sheets**) how strong, broad, and deep you believe the pupil’s current ability is in each of the three sub-habits.
- Please complete **at least one** of the recording sheets for each of your other selected pupils.
- Each sheet gives an example of how you might complete it.

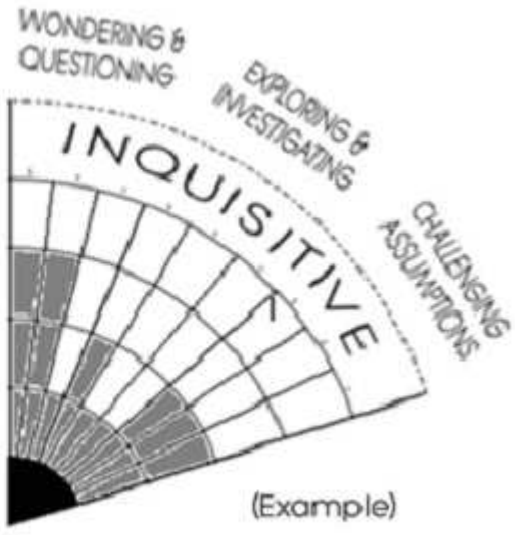
Recording sheet 1

PUPIL NAME:

TEACHER NAME:

DATE:





Recording sheet 2

CHILD NAME:

TEACHER NAME:

DATE:

Forms of evidence (teacher-led for pilot)
Portfolios/passports
Diaries/journals/blogs
Learning stories/journeys
Teacher observations
Testimony from others
Evidence from 'products'
Reports
Reflective interviews
Progress reviews
Other

INQUISITIVE						
	STRENGTH (To what extent does pupil show this habit unsupported and unprompted?)		BREADTH (To what extent does pupil show this habit across a wide range of activities and areas?)		DEPTH (To what extent is pupil's use of this habit skilful and complex?)	
QUESTIONING (WONDER)						
INVESTIGATING (EXPLORE)						
CHALLENGING (DOUBT)						
(Example)	B	(detail evidence used)	A		A	

To quantify strength, breadth, and depth:

KEY				
	Very little; (Awakening)	A bit (Accelerating)	A fair bit; commonly (Advancing)	A lot; a role model (Adept)
Labels that work for you:				
(Example)	A	B	C	D

Appendix 7: FT1 52 detailed questions

At each participating school, teachers collaborated to provide answers to 52 questions in a report. Questions were posed as follows:

How meaningful were the three sub-habits to teachers, and how were labels interpreted and changed?

1. How easily were you able to translate the idea of 'wondering and questioning' into concrete behaviours you might look for in pupils?
2. What alternative language / label did you use for 'wondering and questioning'?
3. How easily were you able to translate the idea of 'exploring and investigating' into concrete behaviours you might look for in pupils?
4. What alternative language / label did you use for 'exploring and investigating'?
5. How easily were you able to translate the idea of 'challenging assumptions' into concrete behaviours you might look for in pupils?
6. What alternative language / label did you use for 'exploring and investigating'?

How easy did teachers find positioning selected pupils in terms of 'strength', 'breadth', and 'depth', and how easy was it for them to decided on and gather supporting evidence?

STRENGTH: **wondering and questioning**

7. How easy was it to gauge the extent to which pupils showed sub habit unsupported and unprompted?
8. How easy was it to decide on and gather suitable supporting evidence?
9. Did you make any discoveries about best practice?

STRENGTH: **exploring and investigating**

10. How easy was it to gauge the extent to which pupils showed sub habit unsupported and unprompted?
11. How easy was it to decide on and gather suitable supporting evidence?

12. Did you make any discoveries about best practice?

STRENGTH: **challenging assumptions**

13. How easy was it to gauge the extent to which pupils showed sub habit unsupported and unprompted?
14. How easy was it to decide on and gather suitable supporting evidence?
15. Did you make any discoveries about best practice?
16. *Please tell us your thoughts on the concept of STRENGTH*

BREADTH: **wondering and questioning**

17. How easy was it to gauge the extent to which pupils showed sub habit across a wide range of activities and areas?
18. How easy was it to decide on and gather suitable supporting evidence?
19. Did you make any discoveries about best practice?

BREADTH: **exploring and investigating**

20. How easy was it to gauge the extent to which pupils showed sub habit across a wide range of activities and areas?
21. How easy was it to decide on and gather suitable supporting evidence?
22. Did you make any discoveries about best practice?

BREADTH: **challenging assumptions**

23. How easy was it to gauge the extent to which pupils showed sub habit across a wide range of activities and areas?
24. How easy was it to decide on and gather suitable supporting evidence?
25. Did you make any discoveries about best practice?
26. *Please tell us your thoughts on the concept of BREADTH*

DEPTH: **wondering and questioning**

27. How easy was it to gauge the extent to which pupils showed sub habit in a skilful and complex way?
28. How easy was it to decide on and gather suitable supporting evidence?
29. Did you make any discoveries about best practice?

DEPTH: **exploring and investigating**

30. How easy was it to gauge the extent to which pupils showed sub habit in a skilful and complex way?
31. How easy was it to decide on and gather suitable supporting evidence?
32. Did you make any discoveries about best practice?

DEPTH: **challenging assumptions**

33. How easy was it to gauge the extent to which pupils showed sub habit in a skilful and complex way?
34. How easy was it to decide on and gather suitable supporting evidence?
35. Did you make any discoveries about best practice?
36. *Please give us your thoughts on the concept of DEPTH*

How did teachers respond to the two tools?

CATEGORIES OF IMPROVEMENT:

37. How did your team feel about the categories 'awakening' (very little); 'accelerating' (a bit), 'advancer' (a fair bit/commonly); 'adept' (a lot/a role model)?
38. Did they use other labels? *Please comment*

THE TOOLS

39. How many of your team trialled both the circle and the grid?
40. Of these team members, which was preferred?
41. Why was this tool preferred?
42. How many of your team trialled the circle only?
43. How many of your team trialled the grid only?
44. *Please provide feedback on the circle.*
45. *Please provide feedback on the grid.*

4) How appropriate / feasible did teachers perceive the four remaining un-trialled habits and their sub-habits?

TEAM'S INITIAL RESPONSE:

46. Imaginative (playing with possibilities; making connections; using intuition) *Please comment*

47. Persistent (tolerating uncertainty; sticking with difficulty; daring to be different) *Please comment*
48. Collaborative (cooperating appropriately; giving and receiving feedback; sharing the 'product') *Please comment*
49. Disciplined (crafting and improving; developing techniques; reflecting critically) *Please comment*
50. Do you foresee any potential difficulties with these habits / sub-habits? *Please comment*
51. Do you think any habits / sub-habits are missing? *Please comment*
52. *Please provide any additional comments, and comments by staff members who saw, but did not trial, the tools.*

Appendix 8: FT2 Draft tool

KS1?	Playing with Possibilities
KS2?	+ Making Connections
KS3?	+ Using Intuition

Information about why this tool is useful for formative assessment…

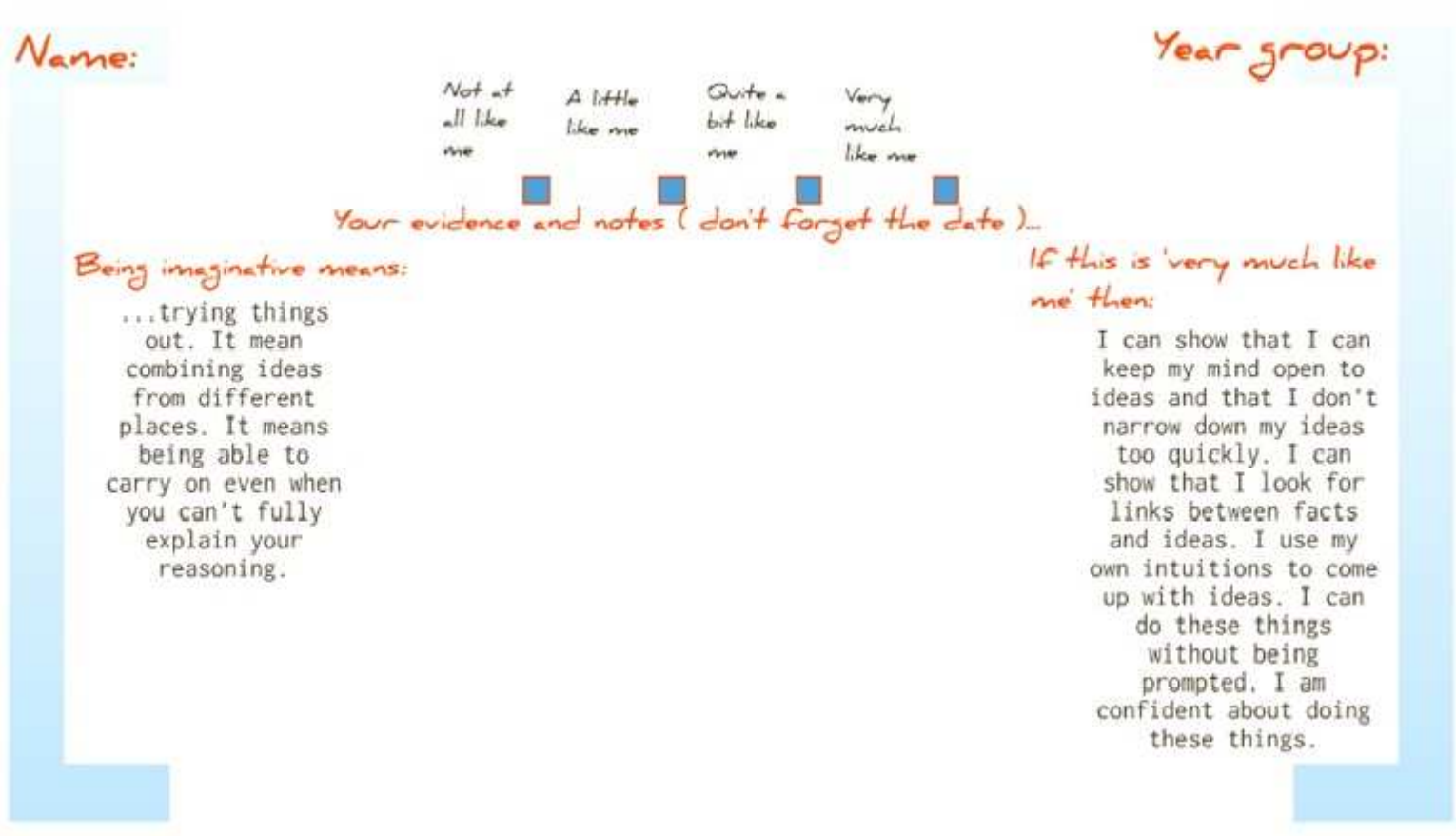
Instructions for carrying out self-assessment…

	Full description of imaginative person		Short description of imaginative person for learners	My evidence about my level of skill 0	1	2	3 I am very skilful at this (exemplar statement of an imaginative person)
KS3	Powerful and creative learners play with ideas, not allowing them to become fixed too early on. They try things out in their mind's eye, on paper, with objects, through movement. They come up with ideas by taking inspiration from all sorts of places. This means making links between different disciplines, activities, places, people, concepts and memories; between school, home, and the wider world. They do not dismiss their own images and intuitions, and use them to help play with ideas. They are able to make tentative decisions even when they cannot always fully justify them. They have lots of information to weigh up but trust their own judgment about the course of action that will work.		Being imaginative means trying things out. It means combining ideas from different places. It means being able to think productively even when you can't fully explain your reasoning.	*Pupils to provide a statement and evidence justifying how close they are to the exemplar →*			I can show that I let my mind be open to ideas and I don't narrow down my ideas too quickly. I can show that I look for links between facts and ideas. I use my own intuitions to come up with ideas. I can do these things without being prompted. I am confident about doing these things.

KS2	Powerful and creative learners play with ideas, not allowing them to become fixed too early on. They try things out in their mind's eye, on paper, with objects, through movement. They come up with ideas by taking inspiration from all sorts of places. This means making links between different disciplines, activities, places, people, concepts and memories; between school, home, and the wider world.		Being imaginative means trying things out. It means combining ideas from different places.	*Need to make sure this can be interpreted at-a-glance by teachers*	I can show that I let my mind be open to ideas and I don't narrow down my ideas too quickly. I can show that I look for links between facts and ideas. I can do these things without being prompted. I am confident about doing these things.

KS1	Powerful and creative learners play with ideas, not allowing them to become fixed too early on. They try things out in their mind's eye, on paper, with objects, through movement.		Being imaginative means trying things out.		I can show that I let my mind be open to ideas and I don't narrow down my ideas too quickly. I do this without being prompted. I am confident about doing this.

Appendix 9: FT2 Pupil reporting sheet



Appendix 10: FT2 Research questions

Objectives:

1. To find out how teachers implemented the assessment project in practice, and what 'worked'.
2. To find out how the tool helped pupils to develop their imagination.
3. To find out how the act of facilitating pupils to use the tool changed teachers' practice.
4. To ascertain the extent to which pupils perceive they are able to self-assess 'imagination', providing sufficient supporting evidence.
5. To ascertain whether a consolidated approach to the dimensions 'strength' and 'depth' is sufficiently sharp to capture both aspects.
6. To ascertain whether a consolidated approach to imagination's sub-habits captures all three aspects (the division of each of the five 'habits' into three 'sub-habits' led to an assessment task that proved too onerous for teachers in FT1)
7. To ascertain whether 'breadth' is captured by pupils giving sufficient examples from outside the subject area in which the tool was completed.
8. To learn how the tool could be developed.

Objective	Questions guiding the research	Questionnaire questions for all teacher participants	Questionnaire questions for a small number of pupils
	Background	Thinking about your previous experience of tracking creativity in pupils	
		How are you already assessing creativity in your school?	

		In which contexts / subject areas are you assessing creativity in your school? How did this project sit within other assessment activities in your school? How did pupils understand 'imagination' before the project? (If given the opportunity to come up with their own definitions at the start)	
1		Thinking about how you introduced the project to pupils	
1	How did teachers introduce the project and its concepts?	How did you introduce the project (the idea of assessing creativity; the idea of learning to get better at noticing 'being imaginative')?	
1	What activities or approaches to introducing the project did teachers find worked best / worst and why?	What went well, or less well?	
1	How did teachers conduct the reflection sessions with pupils?	You held 2-3 reflection sessions with pupils. How did you conduct the reflection sessions; what did you ask pupils to do?	
1	What activities or approaches to the reflection sessions did teachers find worked best / worst and why?	What activities or approaches to the reflection sessions did you find worked best / worst and why?	

2		Thinking about how the process of trying to assess their own creativity might have affected pupils' behaviour	
2	How did pupils understand 'imagination' before the project? (if given the opportunity to come up with their own definitions at the start)	How did pupils understand 'imagination' before the project? (if given the opportunity to come up with their own definitions at the start)	
2	How did pupils respond to the concept of assessing 'imagination', and how did this change? (if it did)	How did pupils respond to the concept of assessing 'imagination', and how did this change? (if it did) [multiple choice and explanation]	
2	How successfully did teachers believe they had been able to facilitate pupils in assessing their imagination over a period of time?	How successfully do you believe you were able to guide pupils in tracking the development of their imagination, using this pupil recording sheet, over the duration of the project?	
2			Thinking about the process of trying to track how imaginative you are, and how it might help you
2	How did the process of completing the pupil recording sheet and seeking evidence affect pupils' thinking and behaviour?	Did you notice a change in the way pupils talked about, and understood, 'being imaginative' as the project progressed?	Now that you've tried out the reporting sheet are you more aware of when you are being imaginative? [multiple choice and explanation]
2	How did pupils respond to the reflection sessions?	How did pupils respond to the reflection sessions?	

2	How easy did pupils find the tool to use?		How easy did you find the pupil recording sheet to use? If difficult, what was hard?
2	How helpful did pupils find the language within the tool?		Should we change any of the words? Which ones, and why?
3		Thinking about how the process of helping pupils to track their own creativity might have impacted your own practice	
3	How were other members of staff (non 'teacher participants') able to support the project?	How were other members of staff (non 'teacher participants') able to support the project? [multiple choice and explanation]	
3	Now that you have helped pupils track their imagination, do you do or think things differently now?		
4		Thinking about how well pupils were able to self-assess 'imagination' and provide enough evidence to support the box they ticked	Thinking about how easily you can track your 'imagination' and provide evidence
4	How easily were pupils able to decide on and gather suitable evidence?		Did you find it easy to decide on and gather 'evidence' to support the box you ticked on the recording sheet? [multiple choice and explanation]

4	To what extent were teachers able to agree with pupils' assessments based on the evidence documented by pupils?	Pupils had to select the tick-box that showed how closely they 'fit' with the exemplar statement. Did you find it easy to 'sign off' this evidence? What was difficult? [multiple choice and explanation]	
4	How easy did teachers find it to 'sign off' pupils' evidence in other subjects?	Pupils were encouraged to provide evidence from areas outside of your subject area. Did you find it easy to 'sign off' this evidence? What was difficult? [multiple choice and explanation]	
4	What attributes of the evidence made some forms of evidence more persuasive than others?	Were some sorts of evidence more or less persuasive than others? Please give examples of evidence that was hard to 'sign off', and evidence that was easy to reach a consensus on with pupils. Please tell us why this was so.	
4		Thinking about how much attention pupils paid to the <u>whole</u> exemplar statement. It talked about using imagination 'without being prompted' and 'confidently'	

5	How successfully did pupils' evidence capture the level of confidence, independence, AND skill?	Did pupils seem to pay attention to each part of the exemplar statement when supporting their choice of tick-box with evidence, or did they provide evidence for some and ignore other aspects? Which bits were ignored? [multiple choice and explanation]	
5	(depth)	Did pupils tend to provide enough evidence for their choice of tick box? [multiple choice and explanation]	
6		Thinking about how much attention pupils paid to the definition of 'imagination' with its three aspects (trying things out, combining ideas from different places, being able to carry on even when you can't fully explain your reasoning)	Thinking about how much attention you paid to the three aspects of 'imagination' in the exemplar statement (not narrowing ideas down too quickly, linking facts and ideas, using intuition)
6	Did pupils evidence all three 'sub-habits' of 'imagination'?	Did pupils pay equal attention to all three aspects of being imaginative when they provided evidence? [multiple choice and explanation]	There were three parts to 'being imaginative'. How many of them did you tend to evidence? [multiple choice and explanation]
7		Thinking about the range of learning settings (including out of school contexts) that pupils drew on	Thinking about the different places you got evidence from

7	Did pupils draw on a range of learning contexts, including out of school learning settings?	To what extent did pupils draw from a range of learning contexts, not just your own subject area? [multiple choice and explanation]	From which subject areas did you draw your evidence? [multiple choice and explanation]
8		Thinking about the whole project - from hearing about it, to receiving the materials, to introducing it to pupils, to trying it out and re-visiting it with them	Thinking about the whole project – from hearing about it, to trying it out, to reflecting in class
8	What benefits and difficulties did teachers encounter?	What three things worked well?	For you, what were the two best things about this pupil reporting tool?
8		What were the three most difficult parts?	What were the two most difficult parts?
8		What three things have you learned?	What two things have you learned about yourself?

Appendix 11: FT2 Participants and data

School	Year	Pupil Questionnaires		Reporting tools	Extra work samples sent
PRIMARY					
Cherbourg	2	6	with tools	(6; see left)	Poster with ideas about defining being imaginative
Oakfield Primary	5/6	0		3 tools (no date)	Each tool has photograph of an unidentified piece of work
	1/2	3	with tool	(3; see left); one tool without questionnaire	
	4/5	4	shortened, with tool	(4; see left)	
	5/6	7	with tool (all completed on 2 dates)	(7; see left)	Each questionnaire has pupil's definition of being imaginative
Our Lady of Victories Primary	2	0	0	0	0
Our Lady of Victories Primary	(N)	0	0	0	0
Priory Primary	2	1	(5 named pupils)	30 (designed by teacher)	
Priory Primary	6	7		22 reporting tools (designed by teacher)	37 pieces of pupil annotated work
Sandwich	4	6		9	9
Sandwich	4	3		0	0
Sandwich	5	5		0	5
Sandwich	5	5		5 pupils	5
Sandwich	6	10		8 pupils	9
Sandwich	6			Shared with other Y6 teacher	Shared with other Y6 teacher
SECONDARY					
Bishop Luffa	8	7		7	0
Bishop Luffa	8	8		8	11 additional pupil q'naire with no tool; 2 additional tools
Bishop Luffa	8	15	(no teacher q'naire)	15	3 additional pupil q'naires with no tool; 12 additional tools
Eton	9	0		6	0

Ludlow	8	10	SLu1/8P1-10	8 (designed by teacher)	8 peer reflections
South Dartmoor	8	7		27 (7 see left; 20 additional)	
South Dartmoor	8	5	with tools	19 (5 see left; 14 additional)	2 pupil planning sheets
South Dartmoor	8	5	on one q'naire	5 (some dated over more than one date)	
South Dartmoor	8	0	(no teacher q'naire)	23	
Thomas Tallis	9	8		60 tools (as summary) some done on 2 or 3 dates	Collated sentences giving recent examples of being imaginative
Winton	7	3		0	
Winton	-	-		-	Focus group – 3 teachers