

**A SMALL ACTION RESEARCH PROJECT:**

**A QUALITATIVE CASE STUDY OF CITIZENSHIP EDUCATION**

**IN THE SCIENCE AND GEOGRAPHY CLASSROOM IN A**

**COMPREHENSIVE SECONDARY SCHOOL**

**SUPERVISED INDEPENDENT STUDY UNIT (30 credits)**

**By**

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## **Research Question**

What is the nature of the thinking and learning processes that are being stimulated in students when values interventions are being introduced in Geography and Science lessons and how might these promote an effective education for citizenship?

### **Introduction**

With the introduction of Citizenship Education into English schools from August 2002 there is a perceived need to explore what this is going to involve for schools. The Church of England Secondary Comprehensive where this research is conducted conceives that education for citizenship should permeate all aspects of the curriculum, including specific subject teaching and all other aspects of school life. It is about educating the whole person, preparing young people for adult life and empowering them to learn and act beyond the school gates in ways that benefit not only themselves, but also their local community and society at large. This should mean that the priority for a school is to create effective learners, and to focus on how they are developing their student's learning capacities.

Research already done at this school revealed that the introduction of what were termed 'values interventions' into subject lessons did contribute to learning processes going on in those lessons. In 1997 the school had embarked on a process of clarifying

its vision and, in consultation with the community, established a core set of values to encapsulate this. The teacher research group came to the conclusion that:

‘each of these values has spiritual, moral, social and cultural components to them.....also...these values appear[ed] implicitly in all of the subjects of the curriculum..’ (Midgley et al 1998)

The group sought to demonstrate whether ‘explicit teaching and learning strategies to promote the school’s set of values would lead to changes in the ways in which they used those values in their thinking about the subjects.’ In order to test this, teachers sought to identify areas within their subject schemes of work where these values could be taught and to introduce them as ‘interventions’ in main-stream subject lessons. Among the outcomes of the project was a developing understanding that there was:

‘significant potential to deliver key aspects of citizenship...through explicit values teaching within the curriculum.’ (Midgley et al 1998)

Building on this work, this piece of empirical research, involving a combination of lesson observations and interviews with students has sought to identify whether ‘values interventions’ do work to develop the sorts of learning processes and thinking that will contribute to an effective education for citizenship. This research aims to provide guidance on a strategy through which to approach teaching and learning for citizenship through the formal curriculum that is already taught in schools, rather than seeing it as a ‘bolt on’. It is an approach to teaching and learning that aims to encourage students to make connections between what they are learning and experiencing in the outside world to the curriculum they encounter in school, what might be termed ‘learning transfer’. The aim is prepare them for ‘lifelong learning’

and 'active citizenship' by equipping them not so much with a received body of knowledge that might help them to make sense of the world, but the capacity to learn and continually create new knowledge as they respond to the challenges of a varied, uncertain and rapidly changing world. As Abbott (1994) writes, learning is:

'...that reflective activity which enables the learner to draw upon previous experience to understand and evaluate the present [contextual learning] so as to shape future action and formulate new knowledge.' (Abbott 1994)

In this sense education for citizenship is perceived as developing skills and dispositions for learning rather than the inculcation of certain defined behaviours that might characterise 'good citizens' which seems more an exercise in assimilation than the promotion of 'active citizenship' or 'change agency'. It is this background that has informed the research question.

## Literature Review

Although there has been and is no unified theory of learning, there are various concepts of learning that have still driven and shaped our current education system in the most significant ways. These views of learning have tended to emphasise an individualistic, mind-centred and linear model of learning (influenced by a Piagetian notion of cognitive development), seeing it as the accumulation of a body of facts or as an end product rather than a process. As Bloomer writes:

‘Thinking about learning has tended to focus on cognitive psychologies..and rest on a notion of ‘given intelligence’ and a deterministic view of development..[ie a focus on the processes of the MIND]’ (Bloomer 2000)

Alongside this, traditional understandings of what constitutes ‘learning’ have been profoundly influenced by the legacy of enlightenment thinking and the scientific revolution. A technological worldview, encapsulated in Newton’s metaphor of the universe as a clock, and the scientific method, have contributed to an understanding of learning as a process of accumulation of information, with a mechanistic focus narrowing the process of teaching and learning to the development of a small range of skills in order to pass established tests (Clark 1997). What is essential to this worldview is:

‘an assumption of separateness...it is as though the world was a fragmented and random collection of jigsaw pieces....the mindset based on this assumption has shaped and dominated education during most of the last century and is still the most prevalent perspective in schools today...student’s spend years collecting and sorting pieces of a puzzle. But without some picture to aid their understanding, the pieces they have collected are essentially meaningless and, therefore, useless.’ (Clark 1997)

What has resulted is that young people perceive their learning as increasingly unrelated to the realities of their everyday lives and experience what might be termed a 'disconnectedness' (Hart 2000). Students fail to see the connection between the knowledge accumulated in school and the realities of the life they encounter outside. What the mechanistic view has perpetuated is that whilst having accumulated a body of 'knowledge' (parts of the jigsaw puzzle) students have not developed capacities to apply that knowledge to a diverse set of contexts. They have not made 'connections'. Clark corroborates this, suggesting that what is needed is a recognition of:

‘...the relevance of a holistic perspective to education...made explicit in a report of the Carnegie Foundation...the report stated the case succinctly, ‘The goal of common learning is to understand the ‘connectedness’ of things’’.  
(Clark 1997)

Students need to develop the capacity for ‘learning transfer’ that could be explained as the ability to carry on learning in many and various contexts, what Claxton (1999) refers to as the ‘domain of applicability.’ What is needed is a focus on the learning process, the creation of a new sort of learner with ‘learning power’ that develops capacities to enable him or her to learn beyond their formal education, and throughout life. Rather than a focus on a narrow band of outcomes in terms of results for certain established tests, students need equipping with awareness of how they can learn, what might be termed metacognition, ‘thoughts about thoughts, knowledge about knowledge, reflections about actions’ (Weinert & Kluwe 1987). Learning is about the learner’s development not only cognitively but as a person, their beliefs, attitudes and capabilities about themselves and about learning. Claxton refers to the essential qualities of effective learners as being resourceful, resilient and reflective. To quote:

‘Learning power depends on developing certain dispositions, qualities and capabilities; but, as with other knowledge and know-how, these are embedded within a shifting intuitive sense of when, where and for what purposes they are best employed.’ (Claxton 1999)

As mentioned earlier, learning needs to be understood as part of the essence of the learner, as the development of their person, their capacities or dispositions, what might be termed ‘the learning self’, or indeed a ‘citizen self’ (Isin & Wood 1999). It is perhaps this that will enable students to be active agents for change in their communities and wider society, the ‘active citizenry’ envisaged by the Crick Report (1998). It seems what is needed is an understanding of the pedagogy that could support and develop ‘learning power’ and the capacities for ‘learning transfer’, and therefore effective teaching for citizenship. As Cairns writes:

‘It is clear therefore that the context for personal learning and citizenship education is firmly rooted within the lifelong learning agenda. Learning....calls for a holistic view of education....one which gives access to the ways and what of learning in a ‘knowledge’ society and thereby transforms attitudes, values and beliefs, including those about ourselves and our society.....creating learners is essential for citizenship.’ (Lawton, Cairns & Gardner 2000)

Challenging new ideas about the nature of learning are working alongside growing and changing understandings of ‘intelligence’ and the way the mind works, how it ‘thinks’. Traditional views of intelligence have been very significant in shaping, not only methods of teaching and learning that have been characteristic of western culture, but also the way learners view themselves and their capacity to learn. This is a view supported by Perkins, in his work ‘Outsmarting IQ’ (1995), where he argues that the mistake that has been made is to assume that intelligence is a unitary entity, a ‘neural given’, one that is gene determinant and therefore cannot be improved, and one that can be measured with numbers. He argues the need to move away from old

concepts of intelligence, which focus on the cognitive in order to educate our young people effectively for the twenty-first century. If intelligence can be learnt then it is beholden to educators to develop strategies that encourage thinking, and give learners the ability to learn, to accumulate this 'learning power' or Claxton's 'learning toolkit'. There is a need to concentrate on developing the sorts of thinking that are not only in line with a multi-faceted view of intelligence but encourage the sort of 'connectivity' that enables 'learning transfer'. As Hart writes:

'Training for intelligence involves cultivating thinking rather than mandating what to think. Education then becomes assisting the powers of the mind in their self development.' (Hart 2000)

Thus, it seems that to provide an effective education for citizenship there is a need to generate the sort of learning summarised here. In an era of huge change where there is multiple access to information and yet an increasing lack of ways to explain or contain it there is a need to develop critical thinkers, who know themselves and can sift the stories of their community and the world (Claxton 1999). Indeed as McPeck writes, critical thinking must surely be an integral part of the whole process and purpose of education. To quote:

'Critical thinking, then, is not just a frill or dietary supplement to be added to education, but is logically entailed by it...critical thinking can improve education. What has not been sufficiently recognised is that it absolutely requires it.' (McPeck 1981)

Students need to develop a learning identity that empowers them to deal with uncertainty, to apply their learning in many different contexts. They need to develop a strong learning identity that gives them a sense of agency, enabling them to be less passive recipients of received understandings, but critical and proactive thinkers who

can work to shape the world around them. As Claxton cites, for Socrates educated minds are able to ‘live in a state of creative ignorance, of inner perplexity and the emotional unease that such perplexity creates.’ (Claxton 1999) It seems clear, therefore, that learning involves not just the development of certain skills, or the refining of cognitive processes but also the dispositions, or what might be termed ‘character’ of the learner. In this sense, the learning process is linked to the development of the learner’s ‘self’, their spiritual, moral and emotional intelligence and self-awareness. As Blair writes:

‘I understand critical thinking as the name for an aim of education – a sort of combined intellectual and moral virtue....As an intellectual virtue it includes skill and understanding.....as a virtue of character it includes the habit of critical reflection about one’s own and other’s problematic assumptions and the valuing of reasoned support for beliefs and actions.’ (Fisher 1988)

In this sense learning involves all aspects of a student’s experience in school that serve to mould both their intellect and character.

### **Introduction to ‘values interventions’**

The values of the school community where this research is conducted reflect the qualities of character that the school wishes to develop in its students, and through which it seeks to develop the qualities of good citizens. In this sense they could be called ‘citizenship’ values, as they incorporate not only a vision of the sort of society the school wishes to promote but also the sorts of qualities that would be necessary in such a society (see Appendix 1 for diagram of how school values inform provision for citizenship). A ‘values project’ conducted at the school from 1998 to 2000 identified that certain sorts of thinking were promoted by what were termed ‘values

interventions' in lessons, and that these contributed to the sorts of learning processes (identified by writers such as Claxton) that could develop capacities for 'learning transfer'. The sorts of thinking developed were organised in diagrammatic form as a 'thinking framework' (see Appendix 2). If the creation of effective learners is essential for active citizenship then further study into how values interventions in lessons might provide for an effective education for citizenship seemed instructive. The 'thinking framework' has been used in this research to identify thinking processes present in the observed lessons and inform conclusions about how these types of thinking might relate to the learning processes that promote good citizenship.

### **Planning a values intervention**

'Values intervention' lessons can be approached in different ways. The aim is to make the values that in many ways are seen as already implicit within the curriculum more explicit. Ways that teachers might plan to introduce these interventions in their lessons is, firstly, by a content approach, using the subject of a particular lesson to draw out a certain value. For example, using the planning of the Nailsea Bypass in Geography to discuss 'valuing others'. The second approach is to actually use the process of the lesson to draw out a particular value. This might be an activity such as a discussion or presentation where the way in which the student's conduct themselves is seen as an opportunity to get them to explore a particular value and how it relates to the work that they are doing, eg valuing ourselves. In the lessons observed in this project the content approach was the one adopted, although in the course of the lesson students were reminded when their behaviour perhaps fell out of line with the expression the particular value in question.

In this research the values interventions conducted involved looking at forgiveness in Geography in the context of looking at the changes to Bristol in the aftermath of World War Two and valuing others through studying the issues surrounding the building of the Great Western Railway. In Science the students considered truth in Science by looking at key discoveries about gravity and stewardship through studying the use of electricity, particularly the ways in which the use of it impact the environment.

In conclusion then, educating for citizenship reaches to the heart of what teaching and learning is all about. Beliefs about intelligence, learning and thinking are inextricably linked and impinge significantly on what educators do, from whole school management to interactions in the classroom. For citizenship education to be effective it needs to be perceived not as a body of knowledge about political institutions and processes driven by a concept of learning as accumulation. Rather, educating citizens is about educating people, it is about what stirs most deeply, about values and dispositions that inform and develop thinking and behaving and capacities for further learning. The challenge is to develop the sort of pedagogy that focuses on the learning process, operating less from 'givens' but more from Socrates 'perplexity' that is the reality of many student's experience, and can be a source of strength and creativity if utilised as opportunity rather than a seen as threat.

## **Methodology**

### **Data collection**

The decision to use a variety of methods of data collection was made with the aim of providing a basis from which to assess the contribution that ‘values intervention’ lessons make to generating ‘learning power’ by stimulating certain sorts of thinking and developing skills and capacities in the learners. As thinking and learning processes are not easily observable, and largely inferred in the process of observation of lessons, interviews of students and analysis of work done and generated by these lessons was done in conjunction with observations. Being such a small project, involving such small samples the findings are not realistically generalizable but can provide some valid indication as to how ‘values interventions’ might provide a way of delivering citizenship education through the formal curriculum.

### **Selection of Samples**

The research was conducted with two classes, one in Science (Year 9) and one in Geography (Year 7). The rationale behind the choices of these particular classes was that the two teachers who teach these groups have had considerable experience in conducting ‘values interventions’ as they were involved with the original research of the ‘values project’. Instead of observing the interventions in just one subject it was useful and appropriate to cover two different subject areas. This informed a considered judgement as to whether the same sorts of thinking could be stimulated

across the curriculum, and also across the age groups. During the timescale when this project was being conducted 'values interventions' were only being introduced in these two groups at certain times that were suitable for both teacher and researcher. Due to this, and the short time-scale of the research, as well as the small scope in terms of written words there were no control groups and only two observations in each subject were conducted.

### **Non-participant observations**

With the framework for 'types of thinking' in mind (see Appendix 2) this research was conducted using non-participant observation with the aim of looking for different types of learning, thinking and intelligences that were being utilised in values lessons. Four lessons were observed, two in Geography and two in Science. Ideally, in order to form more significant conclusions more lessons would need to be observed, but this project will form a foundation on which to build further work of this sort. The observations of lessons were non-structured, producing a text of the lesson, recording the work done and the interactions between teacher and learners. Clearly, there are various limitations to this approach. The position of the researcher is prominent in their selection of interactions to record, and clearly when not physically recording a lesson it is not possible to register every interaction, and the presence of the researcher in the class can also affect the nature of interactions. However, in a classroom without carpeting and a fair amount of background noise similar problems could occur if recording the lesson on tape. Using a video recorder would also impose the same sorts of limitations as the presence of a researcher in the room, and also add pressure to the logistical and organisational considerations of the research

project. The completed text of lesson was a detailed record of all that went on, as far as was possible.

The lesson texts were entered into a Winmax software programme. This is a text-analysis programme that allows for the analysis of existing texts through the application of codes. The texts were analysed through a system of codes (see Appendix 3) to identify different sorts of thinking. As there is no unified theory of learning the coding of the observations was based on the framework established by the values project. This framework identified specific types of thinking and intelligences that were seen be stimulated during 'values interventions'. As can be seen from the framework each 'thinking definition' is broken down into various aspects, and it was these that formed the basis of the researcher's judgement as to whether a specific code could be applied to a certain interaction. Using the example of metacognition, if a comment or question by a student exhibited evidence of independent thought or self-awareness of their own attitudes or views, or of the learning process then this was classified in the coding of the text as an aspect of metacognition ie independent thinking, thinking about thinking (awareness of learning process).

Alongside the framework, other ways of understanding intelligence, thinking and the nature of learning discussed in the literature review were brought to bear when drawing conclusions about the sorts of learning processes going on in these lessons. Based on this an understanding of the learning processes going on in the lesson could be established along with how this relates to the values interventions, and to the sorts of learning and thinking that might promote good citizenship.

## **Semi-Structured Interviews of Students**

Although observation can provide some indication of the sorts of learning processes and thinking going on during a 'values intervention' lesson the collection of data through semi-structured interviews with students provided a different perspective on the same processes, and thus enabled the triangulation of data. A random sample of two students was selected after each lesson for a semi-structured interview to identify more closely their thinking processes. Random selection was important to try and assess the impact of the values intervention itself rather than other factors related to a student's learning.

The questions were designed to ascertain the sorts of thinking stimulated in line with the 'thinking framework', in the same way as with the observations. The interview was structured in order to ascertain these but the questions did allow flexibility for students to express their experiences of the lesson and their learning process. Having initially, to maximise on the time available and to avoid 'one-on-one' situations, interviewed the students in pairs after Geography lessons, this was in fact inhibiting the ways that students were responding, with one student tending to dominate. The interviews after the Science lessons were therefore conducted separately, but in a classroom that was easily visible, therefore avoiding being alone with the interviewees. The interviews were written up in the form of a completed text and again, these records were analysed using the same codes used to analyse the observations through the Winmax software.

## **Samples of student's work**

In order to gauge further the sorts of thinking processes stimulated during the 'values interventions' and therefore to assess the quality of the learning process random samples of student's work generated by these lessons were also collected. An analysis of the tasks generated by the lessons and the extent to which student's engaged with them could serve to demonstrate how effective these lessons could be in promoting effective education for citizenship. Again these pieces of work were selected at random with the aim of focussing on the impact of the values intervention on the student's work rather than other factors about a particular student. Samples of student's work were also analysed using the same coding system through Winmax software.

In respect of ethical considerations the identities of the teachers and students in this piece of research are kept confidential and where specifically quoted pseudonyms are used eg Student A.

## **Findings & Discussion**

### **Observations**

The texts of the observations of the four lessons, two in Science and two in Geography were entered into the Winmax text-analysis programme and the coding applied to where responses given by students in the lesson seemed to indicate the different types of thinking specified in the thinking framework (see Appendix 3 for codes used). The frequencies in the occurrence of each code in the Geography and Science lessons was then computed using the programme, to identify which types of thinking seemed more prevalent than others, and to provide some indication as to the impact of the values work in stimulating certain sorts of thinking in the observed lessons. The calculations in each subject lesson could also highlight whether there was any difference in the sorts of thinking stimulated by values interventions in each subject. An overall computation of the effect of values interventions across all the lessons was also calculated to show whether certain sorts of thinking seemed to prevail over others in values intervention lessons.

An analysis of the frequency of the codes in both Geography and Science did indicate that certain sorts of thinking, particularly components of metacognitive thinking, critical thinking and instances showing emotional, spiritual and moral intelligence appeared in these lessons. Also there were some instances of systems thinking (see tables below).

**TABLES SHOWING CODE FREQUENCIES FOR OBSERVED LESSONS**

CODES	FREQCS	LINES
creative thinking	1	3
creative thinking.thinking beyond	1	1
Critical thinking.Learning to question	1	2
Critical thinking.Learning to reason	1	1
Emotional Intelligence.empathy	4	10
Meta-cognition.independent thinking	2	2
Spiritual/moral intelligence.relationship with others	1	1
Systems thinking.contextual thinking	1	2
Systems thinking.making connections	2	2

**Table 1: Combined code frequencies for Geography Lessons Observed**

CODES	FREQCS	LINES
Critical thinking.Learning to reason	3	4
Emotional Intelligence.self-awareness	1	1
Meta-cognition.independent thinking	5	8
Speculative thinking.futures thinking	1	2
Systems thinking.contextual thinking	1	1

**Table 2: Combined Code frequencies for Science Lessons**

CODES	FREQCS	LINES
creative thinking	1	3
creative thinking.thinking beyond	1	1
Critical thinking.Learning to question	1	2
Critical thinking.Learning to reason	4	5
Emotional Intelligence.empathy	4	10
Emotional Intelligence.self-awareness	1	1
Meta-cognition.independent thinking	7	10
Speculative thinking.futures thinking	1	2
Spiritual/moral intelligence.relationship with others	1	1
Systems thinking.contextual thinking	2	3
Systems thinking.making connections	2	2

**Table 3: Combined code frequencies for all observed lessons**

These sorts of thinking were ascertained by observation and recording of oral expressions during lessons. In the Geography lesson focussing on the value of forgiveness through looking at the effects of bombing in World War Two on the city of Bristol emotional intelligence was expressed by feelings of empathy with those who endured bombing and the effects it had on the city, and reactions to the Germans who perpetrated this damage. For example, after discussing the effect of the bombing on Bristol in November 1940 Student A made this response:

*'I would feel scared and feel that it had changed my life....Also, I would be afraid that my street might be bombed.'*

On looking at pictures of the war damage to Bristol and discussing the difference between pictures of places before and after bombing, and thinking about how these were different from the how the city looks currently students could identify the changes that had happened to the city as a result of the bombing and why things look like they do today. On being questioned on how the buildings in central Bristol have changed student B made this response:

*'They have become more modern....not made out of wood but out of brick. They are also squarer in shape....'*

Overall, the contributions in the lesson seemed to indicate what might be called 'situated cognition' or 'contextual learning' (systems thinking) in that they were relating their learning in the lesson to their knowledge and experience of the city as it is today. As students looked at the pictures there were various cries of recognition of certain places, such as Union Street in central Bristol and expressions of surprise at how much the city had changed, because of the bombing. In the course of the lesson,

as the teacher was discussing the impact of the war Student C made an unprompted comment:

*'This is more history than geography.'*

This showed metacognition, both independent thinking and understanding of what was being learnt in the lesson and how that related to other areas of learning that they experienced in school (awareness of the learning process). When the class later moved on to discussing possible justifications for the British decision to bomb Dresden Student C made a further comment:

*'This is RE now.'*

The learner was again making links with other areas of learning (systems thinking, metacognition), showing awareness that issues, such as those of retribution, justice, revenge and forgiveness usually have prominence in a subject like RE, and were not usually associated with Geography. Had time allowed more discussion, these comments might have formed a fruitful basis for further discussion as to the connections between Geography and other areas of the curriculum. There was also critical thinking going on in terms of engaging with how we did or should respond to the actions of the Germans took in the war in destroying the city of Bristol through bombing, themes such as justice and revenge arose in discussion:

*'We felt they should go through the pain that we went through [referring to the decision to bomb Dresden].'* Student D

Students in this lesson also showed capacities of spiritual and moral intelligence through their responses in discussion over whether certain actions in war are justified, and the reasons why they are taken. Student D showed awareness that forgiveness is necessary to stop a cycle of violence:

*'Without forgiveness we would not be alive.....it was forgiveness that stopped the war.'* Student D.

In Science lessons similar indications of the sorts of thinking classified by the framework were exhibited. When discussing why the students believed certain things to be true in science their responses showed self-awareness (emotional intelligence), and also the ability to question their own assumptions and to think independently (metacognition and critical thinking). For example, when asked by the teacher why they believed certain scientific principles student's responses included:

*'because there is evidence to support it....if you explain it in certain words it sounds convincing.....if their father or someone else before them had done the experiment before them...'*

Here there is awareness shown that individuals do not only have beliefs based on evidence but are also influenced by those with reputation or persuasive power, which might cause individuals to carry on believing something in the face of evidence to the contrary, or indeed lack of evidence. For example, in a discussion of why Aristotle's ideas were held and believed for so long despite evidence to the contrary Student B responded:

*'Later on people believed because everyone else had believed his ideas for a long time.'*

Students also showed their awareness of the context of their learning (systems thinking) and independent thinking (metacognition) in their responses to the theme of stewardship in relation to their own, and their community's use of electricity. The lessons showed that there was awareness being developed in terms of the learning process but also the relationship between the content and then the values and human behaviour aspect of learning. As much of the work done in the lesson was centred in written tasks and group work the evidence for this is primarily drawn from the subsequent interviews and examples of student's work. Generally, the findings showed that certain sorts of thinking were stimulated in values intervention lessons. This thinking could be said to characterise a learning process that develops the skills and capacities of lifelong learners and therefore delivers an effective education for citizenship. Although the instances shown are more present in the Science lessons than in Geography it was felt that this was due more to the fact that the values were not made as explicit in the Geography lessons as in the Science lessons.

### **Semi-Structured Interviews**

These interviews provided useful additional evidence of the thinking processes of students in the values intervention lessons. A reading of the text and an analysis of the codes applied reveals that in both Science and Geography students felt that the introduction of values interventions in their lessons caused them to think more about the meaning of the 'value' and how it applied, not only in the context of the lesson but also in terms of their own behaviour. Again, the responses also illustrated aspects of

emotional intelligence (empathy and self-awareness) systems thinking (making connections, contextual learning) (see tables below).

**TABLES SHOWING CODE FREQUENCIES FOR SEMI-STRUCTURED  
INTERVIEWS WITH STUDENTS**

CODES	FREQCS	LINES
creative thinking.thinking beyond	1	2
Emotional Intelligence.empathy	2	6
Emotional Intelligence.self-awareness	2	6
Meta-cognition.awareness of learning process	2	7
Meta-cognition.independent thinking	1	2
Speculative thinking.futures thinking	1	2
Spiritual/moral intelligence.relationship with others	4	13
Spiritual/moral intelligence.relationship with self	1	4
Systems thinking.contextual thinking	4	12
Systems thinking.hist.systems/contem.worldview	1	3
Systems thinking.links to values framework	3	7
Systems thinking.making connections	5	11

**Table 4: Combined code frequencies for interviews conducted after Geography lesson observations**

CODES	FREQCS	LINES
creative thinking.thinking beyond	3	6
Critical thinking.Learning to question	6	11
Critical thinking.Learning to reason	1	2
Emotional Intelligence.hope	1	3
Emotional Intelligence.self-awareness	8	17
Meta-cognition.awareness of learning process	8	12
Meta-cognition.independent thinking	2	3
Speculative thinking.futures thinking	3	7
Speculative thinking.vision/direction	5	11
Spiritual/moral intelligence.relationship with others	2	3
Spiritual/moral intelligence.relationship with self	8	15
Systems thinking.contextual thinking	14	29
Systems thinking.hist.systems/contem.worldview	2	5
Systems thinking.links to values framework	4	7
Systems thinking.making connections	19	39

**Table 5: Combined code frequencies for interviews conducted after observed Science Lessons**

CODES	FREQCS	LINES
creative thinking.thinking beyond	4	8
Critical thinking.Learning to question	6	11
Critical thinking.Learning to reason	1	2
Emotional Intelligence.empathy	2	6
Emotional Intelligence.hope	1	3
Emotional Intelligence.self-awareness	10	23
Meta-cognition.awareness of learning process	10	19
Meta-cognition.independent thinking	3	5
Speculative thinking.futures thinking	4	9
Speculative thinking.vision/direction	5	11
Spiritual/moral intelligence.relationship with others	6	16
Spiritual/moral intelligence.relationship with self	9	19
Systems thinking.contextual thinking	18	41
Systems thinking.hist.systems/contem.worldview	3	8
Systems thinking.links to values framework	7	14
Systems thinking.making connections	24	50

**Table 6: Combined code frequencies of all interviews conducted**

Examples of such responses included that of Student E who was present in the lesson on forgiveness in Geography:

*‘...it helps me to understand the city and why things are the way they are....It has made me realise how much it has changed and what has caused the differences...it has also made me understand about how people felt about it changing...’ Student E*

Student F responded:

*‘It did show me links that Geography has with other subjects...like History and RE..’*

In terms of developing what might be termed spiritual and moral intelligence, Student G responded to the Geography lesson on ‘valuing others’ saying:

*‘It links values with the way you behave..’ Student G*

In this sense the values intervention lesson was encouraging the students to think not only of others behaviour but also to link the value to their own attitudes and behaviour. One student also expressed that the values approach to their learning in Geography helped her to make connections with the learning the lesson and the outside world, ie how that learning applied in a wider context (systems thinking, metacognition):

*'It means that you are learning about life...'* Student H

This link between learning and individual behaviour was also emphasised in the Science lesson on stewardship and electricity where student's were encouraged to relate what they had learnt about the impact of using electricity with their own personal and community use of it. Student C responded:

*'You would think about [how you used electricity] more....when you make a cup of tea...think about ways of using less..'* Student C

When asked whether he felt learning about the impact of using electricity was important Student D said:

*'Yeah because it might make us do something about it.'* Student D

Although further evidence would be needed to see whether student's did actually act on what they learnt and said it seems clear that the values intervention had prompted them to reflect on their own behaviour and to seek possible strategies for changing it

(independent thinking, self-aware reflection – metacognition, emotional intelligence, critical thinking). As Student E suggested about studying these issues:

*'It makes you aware....unless you are aware you can't change anything.'*

In response to the lesson based on the value of truth in Science student's responses showed that the lesson had encouraged them to think more critically in terms of learning to question what they learnt and believed, to be able to justify their reasons for believing something. As Student F said:

*'Yes I think it has made me think more about what I think and why and not just accept what I read.'*

One of the students interviewed was able to relate his learning in Science to other areas of belief in his life. For example, he could relate the need to justify his own religious belief system as a Christian with his scientific beliefs. He had his reasons for having his faith and felt that it was important to be able to explain these. In the same way, a scientist should be able to support and explain his discoveries about the world:

*'It is important to learn about truth....Scientists have a responsibility...people trust scientists and what they say.'* Student G

Interviews after both Science and Geography lessons did show that students felt that approaching the lesson content from a new angle had caused them to think about how what they learnt in the lesson related to their own behaviour (systems (contextual thinking) and how that related to other areas of learning (systems thinking (making

connections). It also seemed that the lessons encouraged them to think more critically, both about what they were learning, but also about the issues raised by what they learnt. For example, engaging with why people believed what scientists had purportedly 'discovered' about gravity, and how this changed over time, encouraged one of the students interviewed to think about scientific 'fact' in a new way. The work done in Geography on forgiveness encouraged students to think more about their own attitudes to perceived injustice, and the benefits or not of exacting revenge, although if time allowed this could have been developed more. The introduction of the values intervention therefore served to encourage the development of emotional, spiritual and moral intelligence as students were encouraged to reflect, and relate their learning to aspects of human behaviour, their own and others. The instances of these can be seen in the above tables, and some of the examples cited.

### **Analysis of Student's Work**

The coding process was also applied to random selections of students work, although this proved somewhat problematic, especially in Geography where the follow-up from lessons was not coherent, or in the case of the second observation the values intervention was not sufficiently explicit to produce meaningful piece of work for analysis. In Science, although the nature of the tasks was somewhat more effective in building on the values discussion in the lessons, there were ways in which tasks could be extended or made more explicit in relation the value being explored. However, there is some indication of the same sorts of thinking exhibited in the interviews and observations. The introduction of the values intervention promoted

systems thinking in terms putting the learning in context with the outside world and other areas of learning. This was shown in the follow- up task which included a letter to Tony Blair detailing measures to curb the consumption of electricity (see Appendix 4 for examples of student's work). It encouraged critical thinking, in terms of self-awareness about the learners own behaviour, especially in regard to the use of electricity (see Appendix 4 for examples of student's work) as well as independent thinking considering ways of cutting down on personal and wider consumption of electricity. The sample collected, in conjunction with the lesson observations and interviews does suggest that values interventions do encourage the sorts of thinking, and could encourage the sort of action distinctive of 'good citizenship'.

## **Conclusions and Recommendations**

Clearly in order to draw more significant conclusions from the observations of the 'values interventions' in lessons there would need to be control groups to indicate whether the sorts of thinking encouraged by values interventions in lessons differed from those in mainstream lessons. A wider selection of students would also need to be interviewed in order to ascertain whether the sorts of thinking being developed was due to the introduction of values interventions more than other factors. The sample of 'values intervention' lessons would also need to be larger, and across a wider range of subject areas, and more lessons observed.

There were limitations on the ability of the researcher to ascertain the sorts of thinking going on by merely observing oral interactions in the lesson, hence the need for pupil interviews and copies of student's work. More work needs to be done on different sorts of thinking and how they are exhibited in students, as at present this has only been inferred from student responses and written work, and the researcher's understanding from her own reading of previous research as to what sort of criterion to apply in identifying thinking processes. Also, there are issues of objectivity in terms of the assigning of codes to the texts of the observations, as it was at the researcher's discretion to ascertain where certain sorts of thinking appeared to be in evidence.

The instances of the sorts of thinking suggested by the framework in values intervention lessons may have been more explicit and frequent if time in the lessons and subsequent lessons had been allowed for more extensive follow up work. To take the issues further the students in the Science class could, for example, have been

encouraged to take some more concrete action in the school and local community over the issue of electricity usage. Where work during lessons was conducted in groups there were difficulties in ascertaining the responses of students in the lesson. Also, due to pressures on the teachers concerned the values in question were not always made as explicit in the course of the lessons as they might have been. The opportunity for observation of a greater number of lessons would allow for more significant conclusions to be drawn. The impact of values interventions on the sorts of thinking, and therefore the sorts of learning capacities and skills developed could only be confirmed by more in-depth research.

In order to form more substantial conclusions more examples of student work would need to be analysed in relation to values interventions, and the nature of the tasks more explicitly and substantially related to the values intervention conducted in the observed lessons. The paucity of the evidence was less a demonstration of the failure of the values intervention to stimulate the different sorts of thinking than the nature of the tasks set. Interviews with students did seem to confirm, as far as was possible, the findings of the observations that values interventions do make some contribution to developing certain sorts of thinking in students, although again more lessons and interviews would need to be conducted to make more substantial conclusions.

Despite limitations highlighted, this research has shown that values interventions in lessons do encourage the sorts of thinking that pertain to lifelong learning and promoting an effective education for citizenship (see table below for overall results in terms of the sorts of thinking shown).

<b>CODES</b>	<b>FREQCS</b>	<b>LINES</b>
creative thinking	5	26
creative thinking.thinking beyond	5	9
Critical thinking	1	2
Critical thinking.Learning to question	7	13
Critical thinking.Learning to reason	6	10
Emotional Intelligence.empathy	9	19
Emotional Intelligence.hope	2	4
Emotional Intelligence.self-awareness	15	43
Meta-cognition.awareness of learning process	10	19
Meta-cognition.independent thinking	12	19
Speculative thinking	1	3
Speculative thinking.futures thinking	7	14
Speculative thinking.vision/direction	6	13
Spiritual/moral intelligence.relationship with others	8	18
Spiritual/moral intelligence.relationship with self	10	22
Systems thinking.contextual thinking	26	74
Systems thinking.hist.systems/contem.worldview	4	10
Systems thinking.links to values framework	12	38
Systems thinking.making connections	36	90

**Table 7: Combined code frequency for observations, interviews and student's work in conjunction with values intervention lessons**

By stimulating metacognitive processes values interventions do encourage awareness in students of how they are learning. They enable and encourage students to make connections between what they are learning and the outside world (systems thinking) and also in relation to their own behaviour (self-awareness, moral intelligence).

This research has demonstrated that learning, thinking and intelligence are intricately intertwined and beliefs about these will influence significantly the processes of teaching and learning. It has identified how the introduction of 'values interventions' into mainstream lessons might encourage the sorts of thinking, and contribute to a learning process that develops the skills, capacities and dispositions that promote active citizenship. It provides the rationale for an approach to citizenship education that expresses the values of the whole school community, incorporating them through mainstream subjects in the curriculum, prioritising pedagogy as the linchpin of an effective delivery.

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