

**School Based Action Research
St Mary Redcliffe and Temple School,
Bristol.**

**Implementing teaching and learning strategies to
promote the spiritual, moral, social and cultural
development of pupils within the curriculum**

Teacher Training Agency Research Project

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Chapter One

Purpose and Background of the Research

1.1. Introduction.

This project is part of a larger school based action research programme that began in September 1997 and was aimed at developing a whole school policy for the spiritual, moral, social and cultural development of pupils. During the academic year 97/8 a group of five teachers, two governors and nineteen 'A' level sociology students worked closely with the draft guidance being piloted by the Qualifications and Curriculum Authority for work in this area. They succeeded in identifying a set of core values that have the authority of consensus within the school community and in presenting a rationale for a whole school policy for spiritual, moral, social and cultural development.

1.2. Research Question

This Teacher Training Agency project is related to one important aspect of the delivery of that whole school policy. Its focus is on a critical evaluation of teaching and learning strategies within the taught curriculum which integrate the school's core values with the subject matter being taught within the curriculum. The specific research question is:

Do planned lesson interventions which promote learning and reflection about the schools values change the way in which pupils perceive those values in relation to science, music, RE, geography and french?

Changes in the ways in which pupils perceive the school's core values were argued to be consistent with the notion of positive development if the pupils increased in their understanding of the relevance of those values to a particular subject. An increased use of the core values in relation to the taught curriculum was argued to be consistent with the notion of spiritual, moral, social and cultural development of pupils. This is because the school's core values are deemed to have spiritual, moral, social and cultural aspects to them, which are difficult to separate out, and which are present in potential in any serious reflection on those values.

The purpose was to find out whether teaching about values in a planned and integrated way across a range of subjects would encourage an understanding, appreciation and personal interpretation of those values.

1.3. Research Aims

The project aimed to:

1.3.1. Measure the ways in which pupils understood the school's values in relation to the taught curriculum.

- 1.3.2. Design and implement teaching and learning strategies that intentionally promote an understanding of the school's core values as learning objectives within lesson plans.
- 1.3.3. Assess the effect of the delivery of these lessons on the ways pupils' understand the school's values in relation to the subjects.
- 1.3.4. Review the impact on curriculum design and implementation of teaching and learning strategies to promote spiritual, moral, social and cultural development through the school's core values within the whole curriculum.
- 1.3.5. Assess the reactions and responses of teachers involved in lesson design and values interpretation on the classroom.

1.4. Evidence Search

This topic is notoriously difficult to define in precise and measurable terms and there is relatively little literature in the field that can be drawn upon as background, particularly in the area of assessment and monitoring of spiritual, moral, social and cultural development, or values education.

This chapter will explore the historical background and the contemporary policy context, in terms of statutory requirements and legislation; it will then propose a theoretical framework within which the project will develop; finally it will summarise the research phase in the school which led to this Teacher Training Agency sponsored project.

1.5. Historical Background and the Contemporary Policy Context

This section reviews the recent understanding and expectation of values in the taught curriculum.

The idea that schooling is value laden, and serves particular moral and social purposes has been present throughout the history of formal education in one form or another. The Education Act of 1944 which formed the basis for formal schooling in England begins with the preamble: :

“It shall be the duty of the local education authority for every area, as far as their powers extend, to contribute towards the spiritual, moral, mental and physical development of the community by securing that efficient education throughout those stages shall be available to meet the needs of the population of their area”. (Gilliat, 1996,)

At the close of the Second World War the assumptions behind this statement were probably more widely shared than they are today, in a society which is both multi-faith and secularised. However the 1988 Education Act echoed these words in its preamble, (though adding the word social) and subsequent

education acts reinforced the notion of spiritual, moral, social and cultural development as one of the central purposes of the curriculum of schools. In particular the 1992 Education Act requires Her Majesty's Chief Inspector of Schools to keep the Secretary of State informed about the spiritual, moral, social and cultural development of pupils as part of the round of school inspections, alongside consideration of standards, efficiency and effectiveness. The 1996 Education Consolidation Act kept all of these requirements in place and the current rationale for the reviewed National Curriculum summarises these ideas in the following statement:

'RATIONALE FOR THE SCHOOL CURRICULUM AND FUNCTIONS OF THE NATIONAL CURRICULUM

Values and purposes underpinning the school curriculum

Education influences and reflects the values of society, and the kind of society we want ourselves to be. It is important, therefore, to recognise a broad set of common values and purposes which underpin the school curriculum and the work of schools.

Foremost is a belief in education, at home and at school, as a route to spiritual, moral, social, cultural, physical and mental development, and thus the well being, of the individual. Education is also a route to equality of opportunity for all, a healthy and just democracy, a productive economy, and sustainable development. Education should reflect the enduring values that contribute to these ends. These include valuing ourselves, our families and other relationships, the wider groups to which we belong, the diversity in our society and the environment in which we live.* Education should also reaffirm our commitment to the virtues of truth, justice, honesty, trust and a sense of duty.

At the same time education must enable us to respond positively to the opportunities and challenges of the rapidly changing world in which we live and work. In particular, we need to be prepared to engage as individuals, parents, workers and citizens with new work and leisure patterns resulting from economic, social and cultural change, the continued globalisation of the economy and society and with the rapid expansion of communication technologies.'

From [dfee.gov.uk.rationale.doc](http://dfee.gov.uk/rationale.doc) (1999)

1.6.Towards a future clarity

This section develops a working understanding of the terminology of spiritual, moral, social and cultural development.

* In planning their curriculum schools may wish to take into account the statement of values (May 1997) finalised after widespread consultation by the National Forum for Values in Education and the Community.

The 1988 Education Reform Act and subsequent legislation and guidance require schools to address the notion of spiritual development as a part of education without giving any clear definition of the meaning of the term. Wright (1998) argues that the nature of 'spiritual' meaning has suffered from suppression of a well-meaning but nevertheless paternalistic authoritarianism that has sought to isolate religious belief and choice in belief from spiritual experience. He argues that spirituality is fundamentally concerned with the search for truth and can be explored within a plurality of traditions.

His suggested definition of spirituality is:

'Spirituality is the developing relationship of the individual, within community and tradition, to that which is - or is perceived to be - of ultimate concern, ultimate value and ultimate truth'. (1998 p88)

On the basis of these ideas, the spiritual component of spiritual, moral, social and cultural development can be seen to be foundational for the moral, social and cultural components. The following table drawn from the EducareM School Leaders' Manual expresses this:

Table 7

Definitions	
Spiritual	Signifies what we/I believe about the meaning and purpose of life. It is everything about existence on this planet that is beyond the material.
Moral	Because of what we believe about the meaning and purpose of life we live by principles and codes which guide our choices between right and wrong.
Social	Our way of relating to self and others which is influenced by our spirituality and our morality.
Cultural	The ways in which we do things - the rites, rituals, customs and practices which develop over time within communities. Culture gives expression to a community's spirituality, morality, and social values.

Deakin Crick et al (1999) forthcoming, Achieving a Whole School Framework for Spiritual, Moral, Social and Cultural Development, Bristol, VDU.

In contemporary society the question of whose values, and whose spirituality should schools promote is a serious one. However this study takes the position that the responsibility for defining the spiritual tradition and thus the values that underpin the curriculum lies with the school community itself. Success in nurturing pupils within any spiritual tradition thus depends on schools having clear, communal understanding and agreement of their values and the appropriate vehicles in place to ensure that they are delivered.

Wright argues that spiritual nurture is particularly important in acts of collective worship but that it is also the responsibility and place of all subjects within the curriculum to adopt a 'universal perspective' into which all pupils are inducted. After induction it is then the role of the curriculum to explore critical investigation and exploration of tradition and values. In this way each child will be able to grow spiritually and transcend the limitations of existing pedagogy

which is often confined to either superficial observation of phenomena without a values framework, or submergence in stimulating sensitivity. In this way children may grow to be aware of their own spirituality, as well as the traditions and truths of the society in which they find themselves. Only by returning a study of spirituality to the curriculum can a school ensure that spiritual education takes place. Through the opening up of the investigation toward 'truth' across a wide spectrum of the curriculum a child can grow to 'develop an informed and literate understanding of the issues' (Wright 1998). This should lead, not to a narrow and stifled fundamentalist instruction, but to an enlightened, articulate student, able to grapple with the conflicts and alternatives extant in the world and able to grow and reinforce their personal beliefs and values and appreciate those of others.

The teachers and educators involved in this project have grappled with these ideas in theory and in practice for two years prior to this particular project. The following section summarises the background to the research aims outlined here.

1.7. School Based Background

This section summarises the work done by the teacher researchers in developing a whole school approach to the spiritual, moral, social and cultural development of pupils prior to this particular project.

The school based research which formed the foundation for this project took the form of an independent pilot which followed the draft guidance from the Qualifications and Curriculum Authority, currently titled *Guidance for Schools' Promotion of Pupils' Spiritual, Moral, Social and Cultural Development*. This is based on the National Forum for Values in Education and the Community's statement of values, which is a cross-society consensus on those values which schools can be encouraged to promote. It was written after wide consultation across the educational world on what sort of guidance would be most useful. The guidance recommends a six-step process to a whole school approach to work in this area. These steps are:

1. Identify, together with the school communities, the values of the school;
2. Make concrete these values in terms of objectives for each Key Stage;
3. Conduct a review of current practice, identifying current success and opportunities for further work;
4. Plan, timetable, resource and implement the changes needed;
5. Monitor progress in achieving success;
6. Recognise and reward effort and achievement on the part of pupils and adults.

This process was adopted because it became clear during consultation that it would be counterproductive to suggest that schools make use of the Forum's statement of values, rather than engage in the process of identifying their own values. It would also be unnecessary - the Forum's work has shown that if

schools go through the process themselves they will come up with a statement of values very like that produced by the Forum. Teachers and heads consulted argued that if schools go through the process themselves they will 'own' the values produced and these values will be couched in the language of the school's community and formulated in the light of each school's unique position.

St Mary Redcliffe and Temple School embarked on this six step process during the 1997/8 academic year and succeeded in identifying a set of core values, rooted into the school's vision statement, which have the authority of consensus of the school community. Over 900 pupils, all the governors and a substantial number of parents were consulted about those values which they held to be important for the school. In addition a particular research instrument was used to identify whether the actual values of a sample of the community (ten staff members and thirty pupils) was consistent with the espoused values which arose from the consultation. These final values are similar to the values identified by the National Forum for Values in Education and the Community, but also include a value related to the school's foundation as a church school. The school's vision and mission statement and related core values are as follows:

A CHRISTIAN COMMUNITY COMMITTED TO EXCELLENCE

Mission Statement: (a statement of beliefs and values that guide how we achieve our vision)

'Steadfast in faith' we aim to rise above the ordinary by developing education which can transform lives and communities. Inspired by our faith in Christ and together with our parents, churches and communities, we aim for each person to reach their full potential in body, mind, heart and spirit.

Everyone in our school community deserves to be cared for unconditionally and valued equally as a unique creation, made in the image of God. In our learning, in our work, in our relationships and in the ways in which we organise our community we are committed to:

- C caring for each other
- O offering forgiveness
- M making justice our concern
- M maximising self esteem
- I inspiring faith in Christ
- T trusting and being trustworthy
- T taking stewardship seriously
- E enabling growth and learning
- D dedicating ourselves to the pursuit of truth

The core values of our school community are:

Faith in Christ, Valuing Ourselves, Valuing Others, Trustworthiness, Forgiveness, Justice, Stewardship, Truth and Fulfilling our Potential.

The school's core values, identified by pupils, teachers, parents and governors form the heart of the school's approach to spiritual, moral, social and cultural development. These values are formally identified in the most precise language available but it is important to note that other words will be used which refer to the same or similar values. For example for a year seven pupil the word 'fairness' might be more colloquial than 'justice', or 'caring for the environment' instead of 'stewardship'.

Whilst the definition of these core values is deemed to be important, the capacity to reflect upon and articulate the values and to engage in dialogue about them with others in the community was deemed to be of equal value, and more readily achievable as an objective. During the consultation phase it was evident that many pupils, despite their social and religious backgrounds, were not familiar with the language of spiritual, moral, social and cultural values and some explanation was necessary to achieve the aims of the consultation.

1.7.1. Developing Key Stage Objectives

The next step in the process entailed developing key stage objectives. At this point the draft guidance offered by the QCA was found to be problematic in two linked areas.

- Firstly, the links between core values and spiritual, moral, social and cultural development are not conceptually clear.
- Secondly the task of addressing spiritual, moral, social and cultural development separately was felt to be an artificial distinction, and one which generated unacceptable levels of paperwork.

Furthermore, as school based action research, the outcomes were intended to facilitate actual school improvement. Thus the specific direction of the research needed to run in continuity with the school development plan. In this school's case the target of spiritual development across the curriculum had been identified as a strategic target for change and improvement within the school development plan. The intention was that moral, social and cultural development would be addressed specifically and incrementally once spiritual development was in place. Within the school during the autumn term all heads of department had been asked to respond to a questionnaire identifying where and how spiritual development was occurring within the schemes of work. Some guidance was given on the nature and process of spiritual development.

In the light of these key issues the research team identified a conceptual framework for spiritual, moral, social and cultural development which utilised the schools' core values as the organising principle, or an integrating tool.

1.7.2. From Values to Spiritual, Moral, Social and Cultural Development

Firstly the school's values were mapped against the chart for step one in the QCA illustrative matrix. The areas of values identified by the QCA were expanded to include 'Learning to Value the Christian Tradition' and 'Learning to Value Learning'. This was because there were values identified in step one that did not readily fall within the existing framework. The relevant part of the adapted matrix is show below in table 1.

SMRTS Values	Step One
<ul style="list-style-type: none"> • Faith in Christ 	Learning to value the Christian faith
<ul style="list-style-type: none"> • Valuing ourselves 	Learning to value themselves
<ul style="list-style-type: none"> • Valuing others • Trustworthiness • Forgiveness 	Learning to value relationships
<ul style="list-style-type: none"> • Justice 	Learning to value society
<ul style="list-style-type: none"> • Stewardship 	Learning to value the environment
<ul style="list-style-type: none"> • Truth • Fulfilling our potential 	Learning to value learning

Table 1

1.7.3. Content and Method

The next step was to make a distinction between spiritual, moral, social and cultural **development** as a process, and the spiritual, moral, social and cultural **content** of the core values that serve as a fuel for that process. Thus the school's values became the organising principles which supplied the **content** for spiritual, moral, social and cultural development. The **teaching methodology** for promoting spiritual, moral, social and cultural development is distinct from the content and pertains to age appropriate processes and learning opportunities, such as stillness and reflection or critical thinking, or curriculum organisation. For example, awe and wonder are often used as an example of spiritual development. However the question then is, what might pupils experience awe and wonder about? Using this framework the school's values provide guidelines for the focus of that awe and wonder.

1.7.4. Values and Narratives

Finally, and not insignificantly, the core values identified in this project are consciously rooted into a particular belief system or worldview. It is argued that all values are rooted into belief systems of some sort - they are not free floating and separate from facts, worldviews, ideologies, attitudes and beliefs. Most of this schools values are likely to be shared by all worldviews and religions, but their interpretation and the ways in which they cohere into an overall story might be different in a secular, Jewish, Islamic or other type of

school. An understanding of the larger narratives within which differing core values cohere may well enhance the skills of critical thinking in the field of spiritual, moral, social and cultural development as well as in the disciplines themselves. Indeed an understanding of the larger stories, which shape contemporary culture, may be an important means of educating for meaning and purpose.

1.7.5. Values as organising principles

With this reformulated understanding of the school's aims and values and the relationship between them and a whole school policy on spiritual, moral, social and cultural development the following key features of the school's core values were identified.

- Each core value has a spiritual, moral, social and cultural aspect to it.
- The core values cohere within a larger narrative framework – in this school it is that of the Christian faith tradition.
- Most of the values will be shared by most of society and therefore also by teachers and pupils who do not share the Christian faith. In this area, dialogue is a key feature, rather than precise philosophical or religious definitions.
- The subjects of the curriculum inherently address most of these values. Identifying those 'moments' within schemes of work or programmes of study makes explicit what is often already implicit. For many teachers this may strike at the heart of why they teach, thus contributing to a sense of professionalism and purpose.
- Differentiating between spiritual, moral, social and cultural development is complex, if not impossible in practice. However where a core value is used in an educative context some, if not all of spiritual, moral, social and cultural development may be taking place.
- The key distinction is between content and method. The values provide the content. The methodology orients the learner towards spiritual, moral, social and cultural development. For example silence and reflection are methods, which may enable spiritual, moral, social and cultural development to take place but the value/s provide the focus or the content for that development.
- This is not a precise science: it is more of an interpretative task. However it is possible to produce SMART (specific, measurable, achievable, realistic, time related) targets in this field as well as in the usual measurable learning outcomes.
- Coherent spiritual, moral, social and cultural development will enhance measurable learning outcomes. Understanding a wider worldview framework enhances learning by facilitating students in making

connections between otherwise fragmented data. It encourages critical thinking and the revitalisation of tradition and also stimulates institutional and social change.

- The school's values also feature strongly as components of the school's ethos which is built upon relationships of all sorts, many of which are formalised into structures such as tutor groups, senior management team etc.
- All school policies should relate to the school's core values that are set within the school's vision and mission statement.
- The school's aims and values provide a means of curriculum coherence which facilitates learners in making meaning out of school and learning. It is important that the school, the home and the church work together in this area.

1.7.6. A Focus on Teaching and Learning

During the first year the researchers made a decision to focus on the curriculum as a vehicle for spiritual, moral, social and cultural development. This was because many of the teachers and pupils were able to discuss the distinctive ethos of the school, as a caring community, with quality teaching and learning relationships. There was evidence from OFSTED reports and more informal observations and evaluations that the school was relatively successful in this area. However when applying the school's distinctive vision and values to the curriculum itself, there was less certainty and often silence. This was evident from both the investigation and consultation phase of the research. Indeed the very idea of delivering spiritual development, say, in geography, was a difficult one for teachers. Thus working with the planned curriculum and teaching and learning strategies offered a fruitful path for the research, and one which would address the school's developmental needs.

1.7.7. Teaching and Learning Strategies and Curriculum Mapping

In the light of these formulations the research team embarked upon a process of curriculum mapping. This meant addressing the content of the curriculum in detail and identifying whether, and where, encounters with the school's core values naturally occurred within the content of the curriculum. The process was piloted in history in KS3 and it was evident that there were ample opportunities to focus on a core values as learning objectives. For example one cannot study the history of the North American Indians without encountering issues of justice, and valuing others.

1.8. Research Focus on teaching and learning strategies for spiritual, moral, social and cultural development within subjects.

This process was then planned to extend to the whole of KS3 and 4 as a values audit within the curriculum. Meanwhile, the Teacher Training Agency

research team focused on Science, Music, Modern Foreign Languages, Religious Education and Geography to develop a means of monitoring and evaluating this approach in a systematic and planned way. In addition they focused on the development of a typology of teaching and learning strategies which would be useful for other teachers in developing SMART targets for spiritual, moral, social and cultural development of pupils within the formal curriculum.

The teacher research group was self-selecting and represented five subjects from four curriculum faculty areas. These were geography, music, RE, science and french. The team of teacher researchers were introduced to the theory, vocabulary and practice of appropriate research techniques and shared planning sessions preparing for the development of experimental lessons. The deputy head, and two external researchers joined the team and contributed significantly to the process of the research.

Although the subject content and skills were specific to each curriculum area, some of the techniques for incorporating and delivering values education as an integral part of the lesson were common to all. From early in the planning stage the team exchanged ideas and outline lesson plans and resources and worked collaboratively to develop appropriate resources and methods.

Details of the methodology used for the investigation into the effect of particular teaching and learning strategies to promote spiritual, moral, social and cultural development through the school's core values are introduced in chapter two. More detailed information about the particular research instruments used is available in appendix 2.

1.9. Timetable of research team activities:

Autumn term '98	Review progress and familiarise with Repertory Grid methods & vocabulary
	Plan year groups and topics within which interventions should take place
	Prepare resources and lesson plans for interventions
	Run the first series of Repertory Grid questionnaires on both target and control pupil groups
	Begin teaching intervention lessons
Spring Term '99	Continue & complete teaching intervention lessons
	Record, observe & write up opinions & observations from intervention lessons.

Share, review & analyse teaching methods, vocabulary and impacts of values intervention lessons within teacher focus group.

Summer Term '99 Undertake final Rep. Grid questionnaires on both target & control pupils

Analyse and interpret results from repertory grid questionnaires.

Summarise the range of teaching & learning strategies that had been implemented & were seen as useful in delivering values interventions.

Departmental reviews to prepare for wider delivery of values throughout the curriculum.

Chapter Two

Methodology

2. Introduction

The focused research aims introduced in chapter one section 1.3. provided the starting point for deciding what sort of information was required and how that information might be gathered. In this chapter each research aim is taken in turn and more details are given about what information was required and how it was collected. This will indicate the sort of methodology the research team used in the project. The research team met about six times each term for 1.5 hours. There is more detailed information about Personal Construct Theory and Repertory Grid Technique available in Appendix 2.

2.1. Measure the ways in which pupils understand the school's values in relation to the taught curriculum.

The information required for this research aim was whether pupils thought that learning about different ideas in science, music, geography, RE, or French had anything to do with the values that this school thought were important.

To gather this information the research team decided to make use of an existing research instrument called Repertory Grid Technique. This is a form of semi-structured interview that was designed by George Kelly (1955) to elicit information about how individuals go about understanding and making sense of the world in which they live. A repertory grid is a grid whose axes are made up of elements and constructs.

Elements of the individual's world are identified (and called elements) and these can be related to any domain about which the researcher is interested in investigating. In this project the research team took key topics from the schemes of work which the pupils would be encountering during the year and made these the elements of the repertory grid.

The research team used the school's values as constructs to form the second axis of each repertory grid. Constructs are important ways of understanding the world, which have two poles (an emergent pole and a contrast pole) and involve the person's emotions as well as their cognitive thought processes.

Five pupils from each target class and five pupils from each control class were asked to fill in a repertory grid questionnaire in which they rated the relevance of the school's value (or construct) against an aspect of the scheme of work on a seven point scale. The results were formed into a grid, and entered into a computer programme which then performed some statistical tests on the information which resulted in the research team being able to identify which were the most significant values (or constructs) for each pupil in relation to the subject.

2.2. Design and implement teaching and learning strategies that intentionally promote an understanding of the school's core values as learning objectives with lesson plans.

The information required for this research aim was to do with where, if at all, the school's values occur within the schemes of work, and how those values could be made into learning objectives within lessons.

The first step in this process was to identify where within the schemes of work for each subject there were opportunities to specifically teach about the school's values. For example in geography issues of stewardship and justice occur intrinsically as part of learning about road development, questions of truth are inseparable from learning science and respecting others is a natural part of group work in music.

Early in the year the teacher researchers held a focus group discussion with five teachers from other schools who were deemed to have some expertise in spiritual, moral, social and cultural development within the curriculum. Teachers were grouped into subject areas and identified a list of teaching and learning strategies that might be a means of promoting the school's values within the curriculum. They also identified a list of aims of these teaching and learning strategies. These lists are included in chapter five.

The research teachers then planned these teaching and learning strategies into their schemes of work as learning objectives in lesson planning. In some cases evaluation and assessment was included in the form of a piece of written homework. The teachers made their own observations and evaluations on a fieldwork pro forma and these were designed to be available for analysis by the whole team. In practise however, the most productive evaluations took place during the focus groups, which were held during research meetings.

2.3. Assess the impact of the delivery of these lessons on pupil construal of the school's values in relation to the subjects.

The key data which was required for this research aim was to find out whether there were any changes in the ways in which pupils perceived the school's values (as constructs) in relation to the subjects after two terms of teaching and learning interventions.

There were two methods that the teacher researchers used to assess the impact of the experimental teaching and learning strategies on the ways in which pupils understood the school's values in relation to the subjects. The first method was quantitative in that it used the rating scale of the repertory grids before and after the teaching interventions. The second was qualitative in that it elicited the perceptions of the teachers of the impact of the teaching and learning strategies through teacher focus groups. Both methods have strengths and weaknesses and both were useful.

2.3.1. Quantitative Methods

The teacher researchers measured the effect of the experimental teaching and learning strategies on the ways in which pupils understood the school's values in relation to the subjects through the use of the repertory grid instrument. This was undertaken in October, before the teachers intervened in the research project by utilising teaching and learning strategies that focused on values as learning objectives within each scheme of work. After the interventions, in May of that academic year, the instrument was used again in the same way on the same pupils. By a detailed statistical analysis which was provided by the software, the research team was able to make some judgements about changes in the ways pupils understood the school's values before and after the interventions, and to compare the experimental target pupils with the non-experimental control pupils. The results of this analysis of changes in pupils' perceptions of values before and after the interventions are recorded in Chapter Four, Discussion of Findings.

2.3.2. Qualitative Methods

The teachers held three formal focus group discussions during the course of the experimental teaching and learning strategies to identify what they perceived was actually happening in terms of pupils' learning. These discussions were chaired, and each member of the team was asked to comment on each teacher's observations. The outcomes of the discussions were minuted and returned to the teachers for further scrutiny. Two of the discussions were recorded and analysed by one of the researchers.

In addition the deputy head and another researcher observed each teacher on two occasions during the experimental teaching and learning strategies and fed back to the focus group his observations and evaluations. On two occasions videotapes were made of the classes which were also used in the analysis.

As a result by the end of the experimental period the research team were able to identify the ways in which they perceived the experimental pupils' perceptions of the school's values in relation to the subjects to have changed and some ways in which those changes occurred. These are included in Chapter Five, Discussion of Findings as outcomes of the research.

2.4. Review the impact on curriculum design and implementation of teaching and learning strategies to promote spiritual, moral, social and cultural development through the school's core values within the whole curriculum.

The information required here was the effects of teaching and learning interventions on pupils' learning, curriculum design and lesson preparation and assessment.

The qualitative methods outlined in research aim 3 were used for this aim of the research project, and most of the overall review and evaluation of the

implications of the research took place during the final term. One of the researchers undertook a curriculum audit of the whole of Key Stage Three working with designated teachers from each department to disseminate the ideas and to explore where and how the school's values might appear in all of the subjects of the curriculum.

2.5. Assess the reactions and responses of teachers involved in lesson design and values interpretation on the classroom.

The information required here was the teachers' subjective experience of using this methodology as a strategy to promote spiritual, moral, social and cultural development of pupils.

Again the qualitative methodology outlined in section 2.3.2. was the means by which this information was elicited and the findings are included in chapter five.

2.6. Teacher Professional Development

One important issue, which emerged during this work, was related to the nature of teacher's work and the pressures and demands made on them during the normal working day. The pace of the research was slow, despite relatively high levels of motivation amongst the teachers. There was also some anxiety expressed about 'research' itself, as if research belonged to an esoteric world which was unavailable in the ordinary school. The participating teachers engaged in their own professional learning process which was considerably facilitated by the collaborative discussions that were most productive when teachers simply talked about what they did, and asked questions of each other, searching for common themes, ideas and practises. In fact some of the most profound and creative observations, learning and ideas were generated in this context, which was facilitated by a growing sense of trust and collaboration amongst the team.

The research team had the full support of the headteacher and senior management team, and indeed the aims of the research were designed to support one of the key targets of the school development plan, to promote spiritual development within the curriculum. In addition one of the research team was an external researcher from a Higher Education Institution who was available to work with the team on a limited part time basis. Together these factors contributed considerably to teacher professional development as well as to measurable changes in keeping with the school development plan.

Chapter Three

Teaching and Learning Interventions: Descriptions

Between November and May of the research year, the five teacher researchers developed lesson plans which were designed to introduce the school's core values into the content and teaching and learning methodology of the five subjects: Music, Geography, Science, French and Religious Education. In this chapter each teacher provides examples of what they did, with some reflections on what was happening during the interventions, and some comparisons between them.

3.1. Science

The science classes were year eight pupils in mixed sex and mixed ability groups. Both were ostensibly of equal average ability, covering a range of abilities, but not including the most able who were taught together in another group. During the interventions both groups studied approximately the same topics – Earth and Space, Staying Alive, Sight and Sound, Water, and Energy. The five pupils selected from each class for repertory grid analysis were taken from the range of abilities within the class, represented minority ethnic groups, and included one pupil from a low income background, as determined by their receiving a free school meal.

3.1.2. Science Investigations / Working in Groups

This intervention took place towards the end of a number of lessons in which pupils had been engaged in a practical investigation in which they had been working in groups. In order to carry out the investigation, pupils were given the problem of finding out how a variable of their choice affected the amount of light passing through paper (e.g. colour, thickness, number of sheets etc.). Pupils planned their investigation in groups of 2 or 3, carried out their experiments and then reported their findings. This process took approximately 3 one-hour lessons. At the beginning of the third lesson, during the process of reporting on results, I wrote on the board the nine school values. With the pupils working in groups, I asked them to think about how the values were related to the investigation they had been doing, and the work they had been doing together in groups. After 10 minutes, a previously appointed spokes-person for each group shared their ideas with the class, and I wrote these on the board as a brainstorm chart as they were given. Each pupil then copied the ideas into the back of their exercise books. The following is a summary of what the brainstorm contained.

- Trying to get the best possible results.
- Respecting the comments of others in the group.
- Listening to each other's ideas.
- Not cheating - God will know!
- Sharing equipment.

- Making a fair test.
- Not making up results.
- Helping each other with equipment
- Forgiving other peoples mistakes.
- Taking care of equipment.
- Trusting people to get the right equipment.

During the brainstorm there was a lot of enthusiasm to try to "get" as many of the values as possible. Hence, "not cheating - God will know". There was a good general awareness that many values were involved, and ideas came from a wide range of pupils. This process was very much an addition to the normal process of carrying out an investigation. Comments about working together would normally have been restricted to sorting out situations where pupils were not effectively working together!

3.1.3. Charles Drew - Blood Transfusions

This intervention took place over a week, with some work done in lesson time, and some in homework time. The context was a module about certain parts of the human body, including the blood stream. Pupils were first given sheet 1, giving general information about blood transfusions, blood groups and blood banks. They read each section and answered the questions that followed. The work began in a lesson and was completed for homework. The purpose of this sheet was to set the scene in terms of pupils' knowledge and understanding, and present Charles Drew as a respected pioneer in this field.

The second sheet was given as a homework one week later. The purpose of this sheet was to reveal the unexpected side of the story and attempt to link the subject with the theme of racism.

The response of the pupils to the second sheet was quite emotive. These emotions included sadness, anger, upset and irritation over the way in which Drew was treated because he was black, as well as happiness and admiration because of the successful things he had done.

This work was definitely an addition to work that would normally be done on this subject, both in terms of science content and "values" content. Because some work was done as homework it did not extend the time taken to cover the unit too much.

3.1.4. Comparison of the interventions

- The first was a more natural intrusion into the "normal" teaching process, whereas the second was very much an "add-on".
- Because of this there was little extra preparation for the first, while the second took a lot of thought and preparation beforehand. This comparison could be made with other interventions as well.

- Generally, where the intervention was made overtly in connection with the values, there was an interest in trying to see the importance of the values in the work they do, although the attitude "what has this got to do with science?" has not been unknown.

3.2. French

The target groups were year 10 pupils, average ability and perhaps a little bit disaffected with French, especially the boys. French is taught through a series of topics such as personal identification, food and drink, school and shopping. Use of conversation in the target language is encouraged and is used as far as possible. The skills of listening, speaking, reading and writing in the target language are developed through these themes. The course book used attempts to introduce a cultural element – for example study of other French speaking countries, with their differing cultural practices.

Designing values interventions for these themes was straightforward because the topics themselves deal with real life situations, although pupils do not always perceive that to be the case. For example, making a complaint in a shop in the target language was a focus for several interventions which drew upon the school's core values of valuing others, truth and forgiveness. However pupils did not appear initially to make links between this situation and their own experience of making a complaint.

3.2.1. Geographical Surroundings

One topic selected for an intervention was geographical surroundings in which pupils are normally expected to talk and write about their area, the amenities there, their opinions of the area and to increase their vocabulary related to this topic. The focus for an intervention within this topic was the creation of a new community, drawing on the history of the creation of Montreal. (Use was made of materials drawn from the Charis Project)

The pupils had to decide on the following components they wanted in their community;

- The buildings
- The occupations of the people who would be setting up the community
- The rules the community would live by.

One of the features of this intervention was that pupils were asked why they were choosing particular occupations and buildings. This was important because it required them to think speculatively about what is meant by a community, and what is needed to create a happy and stable community. Respecting and valuing others, and justice were the key values which emerged as important. A focus on the rules by which the community would live brought in a number of the school's core values – although not these were not referred to explicitly. Discussion was limited by the pupils' lack of sophistication in the language, and to develop deeper discussions of the

values – for example when is it OK to lie – would have meant moving into English and detracting from the lesson objectives.

Evaluation of the intervention took the form of a test and an Information Technology project, which was a summary of what had been learned. Both the French language was assessed and the level of pupil engagement with the values content. The French language work was not as accurate as would be expected of year 10 pupils because the vocabulary was new, and the teacher focus was on the values intervention itself as a research exercise. The pupils were trying to be more sophisticated in what they communicated about the topic, but lacked the equivalent level of sophistication in the language skills. Pupils were more committed to this new approach to the topic than other year ten groups. The quality of work they produced indicated that they had thought about the values issues, that they did have views of their own and that they were able to speculate about the moral and spiritual components of being a community.

3.2.2. Food and Drink

The Food and Drink topic is normally talking about what pupils like and dislike about food. In this intervention the teacher started in a new way by introducing foreign foods, with a combination of new and old vocabulary. This intervention focused on valuing other people and in particular valuing difference. What the teacher noticed was pupils thinking about their prejudices about foreign food and therefore foreign cultures, and being open to new ideas and cultural practices. Asking questions that elicited deeper meanings was another characteristic of this intervention. For example pupils were asked the reasons why they should be open to new dishes: reasons given were its good to try foreign dishes; you must make an effort to try different food; you don't know what it's like unless you try it.

Another intervention in the food and drink topic included short discussion about the symbolism of bread, as well as its nutritional value. In response in a test a number of pupils made a connection between the religious significance of bread with the Christian tradition.

3.2.3. Wider Issues Arising from French Interventions

The other issues which arose through values interventions was the 'lived' nature of the values in the classroom and the school. For example discussions were held about lying, trusting others and respecting others in the context of learning. Here the teacher consciously engaged with pupils in the application of the school's values to life in school.

The introduction of this approach in year ten meant that the pupils' vocabulary skills had not been developed to cover this type of conversation during key stage three, and thus the lack of language skills impeded the values conversations in the target language and indeed the language development itself. However if this approach were to be included from year seven this

problem would be addressed, as would the issue of time and space within the schemes of work, which is always at a premium.

Another key issue, which arose in the French interventions, was whether or not the introduction of the values teaching should be implicit and informal or explicit and named as such. For year 10 in French the solution of filtering the values into the content and process of French teaching was chosen because it still used the language of the values, but allowed the issues to arise naturally, thus not appearing to be intrusive to potentially sceptical year 10 pupils. Once the pupils had grasped the relevance of the values they were then developed more formally.

3.3. Religious Education

Lessons were conducted with a mixed ability year 10 GCSE class. The attainment of pupils in both target and control groups therefore reflect the middle ability band at the school. Pupils are monitored in Religious Education from year 7 and an assessment of their results made for sets that begin in year 10. A variety of pupils were selected for the research. Issues such as social class, gender, ethnic origins were considered before selection was made therefore registers of groups were checked and the free school lunch menu was examined in order that the sample of pupils represented far as possible the most holistic view of pupils attending the school.

3.3.1. Stages from birth to death: Value focus: God not God (Faith in Christ)

Initially the aim of the lesson was to explore the notion of commitment and examine how the theme relates to stages in humankind's "Journey through Life". The religious element of the journey was to be considered following pupils' first response. Each individual thought about their personal journey using a relevant worksheet. Pupils had previously examined the concept of commitment and their job was to consider each stage in relation to their suggested stages. For example, becoming a sports teacher required a commitment to keeping fit or going to University required a commitment to study hard.

The aim of the lesson in view of the values intervention was to then introduce explicitly Christian rites of passage and examine how commitment via faith was a pre requisite. However the lesson's aim developed in itself as several pupils included baptism and marriage in church as important stages in their own imaginary life's journey. This was a clear illustration of the consensus on the schools value "Faith in Christ". Pupils were proud to share their ideas and others listened thoughtfully. Christian rites were introduced as planned following this and pupils discussed maturely how each related to the notion of commitment. A pupil comment that was noted in the logbook was "These stages in life show people you really believe in God". The general feeling of the class shown later in written work was that people must be committed to their faith before embarking on each stage, as each one reaffirmed belief in God.

3.3.2. Baptism Past and Present: Value Focus: Being Fair/Unfair (Justice)

To begin the topic of baptism I decided to highlight how society today takes baptism as a rite in which Christians are allowed to partake. The group had briefly explored persecution of Christians during the ages as part of their previous module. The aim of the lesson was to contrast the ways in which society (past and present) treated believing Christians who wanted to be baptised. We talked about fair treatment of people in society by means of what it meant to be a free thinking/acting citizen. Pupils discussed sensibly their beliefs on the rights of individuals. Amongst ideas discussed arose whether people should have the right to practise a religious belief. It was decided this was right if its conditions were “acceptable to a tolerant society”. At this stage I read an imaginary story about a Christian family who were committed to the faith and decided to become baptised in the years after Jesus’ death. They knew of the risks facing them. The story ended sadly and consequently the whole family was sentenced to death.

A discussion followed about this scenario and clearly pupils understood the issue of justice in relation to the event. Introducing a topic through a story was extremely effective. By explicitly linking in the value of justice it was necessary to begin the section of work in a different way from normal. The intervention helped pupils think more carefully about the nature of baptism, pupils began to feel and understand how committed early Christians were to their faith. The group recognised how unjust society was for early Christians but also the dedication and strength of the people to carry out what they believed was good and right.

In many respects teaching in Religious Education is already value laden in relation to ethics and spirituality and there was therefore less difference for pupils and teachers between the experience of teaching and learning with the target group and the control groups.

3.4. Geography

The target class was a year seven group, taught as a mixed ability tutor group. In reality they were above average ability.

The group consists of 29 boys and girls. 23 out of the 29 pupils were in the MIDYIS bands A or B. 14 of these were in band A. During the first term the focus of the geography course is to familiarise pupils with the local school environment which is in the centre of the City of Bristol and which is new to many of them. Pupils come from approximately eighty different primary schools and have a wide variety of geographical skills and knowledge.

After a unit of work on map skills in the first half the topics covered were settlement and shopping using the Oxford Geography programme as a core text. This is followed up with a unit covering an in-depth study of the growth of Bristol as an example of the growth of settlements. Integral to this if

fieldwork, following a trail on foot to observe and begin to analyse the areas of change and type of activity now found in the centre of Bristol. The Docks fieldwork is a half-day and is combined with a boat trip around the docks.

Following this a look at transport development and our understanding of the earth's shape and distances is taught.

Values interventions were introduced in the themes of settlement, the case study of Bristol, the evolution and significance of transport and understanding the shape of the earth.

3.4.1. Road Planning

The first target lesson consisted of a role-play of a public enquiry debating whether to allow a new road by-pass to the town of Nailsea. Resources used were all in the textbook and the work relied heavily on an understanding of previous map work. The values targeted were stewardship and respecting others. Pupils were prepared and each pupil had a role that they had to represent at the enquiry. The previous lesson and homework were used to write speeches in preparation.

The classroom was rearranged to simulate a public meeting in a village hall. The teacher was the inspector and admitted pupils 'in role' with a few excursions out of role to register and remind them of purpose. The values targeted were explicitly discussed and written on the board as a reminder. Pupils were reminded prior to the lesson that in looking at changing the environment we have a duty of care to understand the impact and effects of a change such as a new road and that this would be discussed in depth in the public meeting. In such a meeting people would be expected to listen carefully and with respect to others, whether or not their views were shared. Each speaker was allowed to take two questions. The lesson was also recorded on video camera.

Issues of stewardship were very well covered with farmers not wanting to change land use, noise and safety and destruction of habitats being brought out. There were several occasions particularly towards the end of the lesson when the class was reminded, when being partisan, of the focus on respect. At the end there was a vote on the decision at which point there was much booing and cheering. A few minutes were spent at the end of the lesson reviewing how well we had displayed the values which we being focused on. The class was congratulated on their understanding and discussion of the issues of stewardship.

Several pupils acknowledged that it would be more respectful to listen and vote without loud comment, which could put people off and doesn't show respect or value for others. Some pupils acknowledged that there were occasions when members of the audience were talking when others were speaking, which did not demonstrate respect either, and could be improved.

This lesson has been run before with non-target groups. The main differences observed were the greater emphasis and aim of the lesson on the values as standards of behaviour. These are expected and hoped for in all discussion and active presentation lessons but there are frequently lapses from this. Students more easily slip into a partisan or confrontational model, perhaps through the influence of other role models.

3.4.2. Shape of the Earth

Later in the year, early in the summer term, the class was looking at the shape of the earth and our understanding of this as an introduction to longitude and latitude. The first lesson consisted of a question and answer warm up, responding to the question 'What is the shape of the earth?'; 'Where is the earth in space?' and 'how do we know?', This was followed by a 10 to 15 minute story of western understanding of the earth's shape and position in the universe. Key dates and key words or phrases associated with this were written up in a time-line by the teacher as the story progressed.

The stages were:

- The Bible, Genesis chap.1, 'The Creation'. Earth at the centre of the universe.
- 150 AD Ptolemy & the 'Flat Earth' ideas.
- 1534 Nicholas Copernicus, theory of earth as a rotating planet.
- 1632 AD Galileo's publication of his mathematical proof
- 1665 AD Sir Isaac Newton's discovery of gravity & its explanation of the revolution of planets in a solar system.
- Today: Space exploration, high tech. Telescopes and rapid communication. Most people accept unquestioningly the earth as a spherical planet in a bigger universe.

After the story of the gradual understanding a short discussion took place, questioning and clarifying the events and why, particularly, Galileo was punished for explaining his mathematical theories and at the same time accepting the church and God.

Pupils wrote their own summary of the storyline in their books. We then stopped together to contemplate what it was like for Galileo as an old, ill, isolated man going blind in prison. How would he describe what had happened to him and what would he feel about it? How would he feel toward the church and God?

Individually and in silence pupils wrote this out. For the last ten minutes we shared their comments by reading several aloud. Everyone who offered to read had written that they felt it was unfair, they blamed the inquisition but would still believe in God. There was great enthusiasm for reading out their thoughts and no concern or embarrassment at declaring a continued belief in God. The one Muslim in the class had written the same view about attitude to God. When I asked if anyone had written that they would stop believing in God as a result, there was unanimous agreement that they would not.

Perhaps because they are year seven and in a secure environment in a Christian school with regular worship this was wholly acceptable to them. By this time we had had several interventions and they were used to looking at values in geography lessons. This might have helped them to express their ideas readily. I let them know at the end that the church had apologised in 1984.

3.4.3. Fieldwork

Other particularly successful interventions took place with our fieldwork when the value of trust was brought out. It was easy for the class to see the importance of their being trustworthy in behaviour and with belongings. Expectations were made clear and the fact that they were being trusted on a boat trip and walkabout. The class wrote down the importance of trust in this situation. Some of their responses explored areas that the teacher had not considered, one example of many stated “Yes, I did trust others, because I trusted the boat driver to take us down the river and back safely. I also trusted my teacher to look after me”.

On the trip brief reminders were enough to encourage exemplary behaviour and attempts to do one’s best.

3.4.4. Evaluation

Some of the ideas developed were rather ambitious in the timescales available and had to be curtailed or allow more time. I would pare down some lesson plans and focus on fewer, simpler concepts in some cases with this age group in future.

There was a lot of verbal discussion when looking at the theme of forgiveness in relation to the rebuilding of Bristol’s City centre as a result of bomb damage. This was centred on an activity interpreting photographs and written and verbal anecdotes. In addition the involvement of Bristol in the slave trade as an area requiring forgiveness was brought up. Some very perceptive comments were expressed, noting the need to be forgiven for some actions, to forgive for others and the importance of forgiveness to enable us to move forward in life. At the same time there was a small contingent of a few boys who wanted to express anti – German feeling and were not easily prepared to look at forgiveness seriously. With some this was an attention-seeking ploy, but with one it appeared to be part of a longer-term resistance to exploring values in geography. This pupil frequently questioned its relevance, even when very obvious to the rest of the class and was keen to subvert comments made by others. He had a record of school phobia and these rather searching ideas and discussions may have been difficult for him to handle.

Within this subject many of the school’s values are integral to an appreciation of the location and interaction of people in places. Explaining specific values has, for the most part, added an extra dimension to lessons on a spiritual, reflective level and has also led to a build up of trust and respect as these

reflections have been shared. It has frequently put an extra expectation and responsibility on pupils and serves as a reminder to them of their role and influence in their own development. In addition it has added meaning outside the search for 'pure' subject specific knowledge and skills and has opened out topics in a wider social, and often global, context.

3.5. Music

The Music National Curriculum orders place emphasis on Music as a practical and creative subject. There are four Attainment Targets: Composing, Performing, Listening and Appraising within which teachers are allowed freedom to follow their own interests, for example choosing their own examples.

3.5.1. Spiritual, moral, social and cultural aspects of Music

Social

Most music making occurs in a social context. Complex social skills are involved in composing, rehearsing and performing together and co-operation is a prerequisite of a successful outcome. Issues of the individual's contribution to society are constantly encountered, notably the need for distinct individual identity to be preserved at the same time as the collective needs of the performing group are met. Listening and appraising involve acceptance and appreciation of 'otherness'. The Tonal system employed in much Western music allows harmony which functions as a strict hierarchical structure analogous to contemporaneous social structures. Eastern musical traditions express alternative concepts of the individual and their relation to society.

Moral

Music has an inherent power to influence and manipulate feelings, thoughts and actions, persuading us to dance, fight, pray, feel sympathy for a certain character or buy a certain product. It is also reflective of the moral values of its age in its style, scoring and purpose.

Spiritual

Music has been associated with spirituality from the Jewish Psalms to sixties Hippies and beyond. It is a means of heightening spiritual awareness and of transcending the ordinary. As an abstract art it may be an expression of our own inner world as well as of something beyond our selves. At its most powerful it can transform the ordinary into the extraordinary.

Cultural

As an expression of society and a communal activity Music is an important vehicle for cultural definition and identity. Because musical meaning has a significant element of abstraction Music not only provides a window to, but

also allows access to other cultures. An example is the concept of 'Ostinato' (a repeating pattern of either rhythm or pitch) which is common to most musical cultures. Music may thus promote understanding, acceptance, tolerance and empathy with other cultures.

3.5.2. The Target Group

The Target Group is a Year Nine mixed ability class. There are twenty four pupils in total with a gender bias of fifteen girls to nine boys. Two of the girls are from ethnic minority groups. Six pupils have SEN (four girls and two boys) as follows: Stage One: 2 girls, 1 boy, Stage Two: 1 girl, Stage Three: 1 girl, 1 boy.

Seating in the classroom is divided into two halves and the friendship/working groupings are divided similarly along seating lines. Each half of the room has a distinct 'personality', although both sides are a mix of genders and abilities.

3.5.3. End of unit assessment.

Tasks within the SOW:

- i) To develop Listening and Appraising skills
- ii) To comment on and grade practical work.

In this lesson the stated aims were achieved by combining them so that the class listened to each others work (produced in groups of four or five), comment on it and, in discussion with the teacher and the group concerned, arrive at a grade.

The following grading system was used: A-E for Achievement, 1-5 for Effort

The Lesson Process:

Each pupil used two sheets (see examples):

- 1) Personal Evaluation Sheet
- 2) Class Evaluation Sheet

The class listened to one of the groups piece and wrote brief comments on it under the headings 'Composing' and 'Performing'. The group whose work had been heard was then invited to feedback on their own thoughts on hearing the piece as a listener, from the 'outside', for the first time. Other members of the class were then invited to comment on the piece and discussion followed (for example on the validity of using a 'sample' or on the appropriateness of the tempo or scoring). The class was then invited to record their own grade for the piece after which I gave my grade with a verbal justification that was open to close scrutiny and vigorous comment.

Music Teachers will recognise this lesson as corresponding to current thinking on assessment in the Music classroom and most school Music Departments

follow similar procedures. It will also be realised that such lessons afford an opportunity for significant Values related issues to be raised, in fact they cannot be avoided particularly during discussion.

Listening focuses attention on the need to respect others and on the validity of diverse responses to a given stimulus. Discussing also focuses on variety of response. Through encouraging all pupils to contribute and ensuring that they are allowed to, and through accepting and giving only positively expressed comments self-esteem is raised and pupils valuing of themselves reinforced.

In giving grades pupils were allowed the possibility of discriminating between members of each group and the issue of the individuals relationship to a community, potential and justice were raised. Because of the subjective nature of much of the marking criteria, issues of the nature of 'truth' become prominent. As all pupils took part in the same process a degree of relating to one another took place that went beyond sympathy to empathy.

The written notes made by the class in no way express the richness of the verbal exchanges made by the class.

It will be noted that in this lesson it is the process of the lesson itself that forms the central content of the lesson. This concentration on 'process' is an important feature of Music as a classroom subject. In Appraising, as in Composing, what is said, the content is individual and cannot be taught it is the process of Appraising and of Composing which can. Because of this emphasis on process I have found that Values in Music are more readily evident in ways of doing things, than in what is ostensibly the content of the lesson, which is usually an abstract concept, such as 'ostinato'.

3.5.4. Group Work

This way of thinking about teaching indicated that in other commonly used processes values are implicitly present, for example in 'group work'. This led to the development of what turned out to be a highly enjoyable lesson in which the extra-musical processes of time management and group working become the focus.

A teacher led question and answer session led to ideas and examples of good time management being written on the board. Pupils were then asked to brainstorm ideas on what they thought a group of people needed to do in order to work well together, themselves working in mixed gender groups with people they had not worked with previously. An end time for each group to report their findings to the rest of the class was given. In order to complete this task successfully the pupils had to demonstrate good time management and group work skills so that the process and content of the lesson were synonymous.

All groups concluded that it was important to value everyone equally and to be fair, and came up with examples of things needing to be done to achieve this, such as being positive in commenting on each others ideas (see example in

Appendix). There were obvious connections between these ideas and those inherent in the 'Listening and Appraising' process.

Focusing on these skills, which pupils are asked to use in most practical Music lessons, turned out to have a continuing benefit in the way in which pupils have worked in subsequent lessons. They now have a point of reference, of good practice, to refer back to. Their levels of skill and understanding have been raised in a fundamental area that enables them to work more productively.

This practical outcome is very important because it is very evident to the pupils and clearly represents the values in practice. It was also clear that values might be used as a tool that can facilitate the transfer of learning from classroom theory to lived practice.

3.5.5. Tonality

Pupils less readily understood lessons that featured the values as constructs in relation to abstract musical concepts. An example was the idea of tonality as expressing a hierarchical model of a society. Each note or chord has a function and each is integral to the whole. These ideas were introduced through an exploration of harmony, concords and discords. Pupils were able to hear and use different types of chords successfully but found the notion of the tonal system expressing something about the society which produced it was alien to them. Comparisons with the system of Ragas used in North Indian Classical Music and expressive of a different understanding of the individuals relationship to society, time and God, would perhaps have drawn out this inherent strand.

Appendix One

Examples of Lesson Notes and Pupils Work

Science

This worksheet was used in the intervention described above.

CHARLES DREW : BLOOD BANK PIONEER

INTRODUCTION: TRANSFUSIONS, BLOOD GROUPS AND BANKS

Blood transfusion is now a common and life-saving procedure. It is a measure used to restore blood volume after extensive bleeding, burns, or trauma; to improve the blood's oxygen carrying capacity when haemoglobin levels are low in anaemia; and to combat shock (which is due to a low blood circulation). But transfusion could not become a useful or safe procedure until blood groups were discovered (the first system to be identified was ABO in 1900).

The South American Incas apparently practised successful transfusions, but they are nearly all of the same blood type (O+), so incompatibility reactions must have been few. In Europe such reactions were so common and life threatening, that transfusions were banned in France, England and Italy after the late 17th century. Only in this century did transfusion become a useful measure, though at first the method was very slow. The doctor had to determine the blood types of the patient's relatives and friends until the proper type was found. He then performed a crossmatch and the transfusion was given by directly linking the vein of the donor with that of the recipient. Blood was occasionally transfused in this way during World War I, but three quarters of a pint was considered a large amount.

In 1914 it was discovered that sodium citrate could be added to freshly drawn blood to prevent clotting, and during the war, the fact that blood could be stored outside the body for later use was established. In peacetime further major advances were slow. The continuous drip method in which blood flows from a flask was not established until 1935 (at the Middlesex hospital in London). The increasing frequency and volume of blood transfusions was demanding adequate blood storing facilities - blood banks. The first tentative steps were taken in the 1930's in both Russia and America, but it took the Second World War for these to become organised on a large scale. In this development, Charles Drew was a major pioneer.

- 1) Find out and write down the meaning of these words: trauma, haemoglobin, anaemia

- 2) Why was blood transfusion successful amongst the Incas, but not in Europe in the early 17th century?
- 3) What discovery eventually allowed blood transfusion to be possible early this century?
- 4) Why would the early methods of transfusion be useless to us today?
- 5) What kind of human activity made research into blood transfusion happen very quickly?

CHARLES DREW: THE EXPURGATED VERSION

Charles Richard Drew (1904 - 1950) was an American, one of five children born and brought up in Washington. He was a very good athlete at school and University, playing basketball and football, and competing in swimming and athletics track events. He became interested in science and medicine and after his university studies he became a surgeon and professor of medicine. He specialised in the preservation of human blood for later use in transfusions. Whole blood can be stored for only a limited time, but Drew demonstrated that if the components are separated, the blood plasma could be stored in a frozen state. His expertise led to his appointment as director of the medical division of the British Blood Transfusion Association and of the American Red Cross Blood Bank during World War II. He was internationally recognised as a leading authority on blood banks and he received many awards. He died in 1950 following a car accident.

- 1) Find out and write down the meaning of these words: expurgated, professor, blood plasma.
- 2) Write IN YOUR OWN WORDS five sentences describing the kind of man Charles Drew seems to be from this passage.

CHARLES DREW: THE UNEXPURGATED VERSION

So far this is the account of a fascinating and fruitful life, but there is another side to Drew's story.

Drew was a black American and his family home was in a black ghetto. Many times in his life he met with racist rejection.

While at University, his athletics team went to a hotel after a match, but the hotel refused to serve black members of the team.

He became surgeon and Professor at Howard University School of Medicine in Washington D.C. This University had been established in 1867 and was named after one of its founders, General Otis Howard. Howard had fought on the victorious Union side in the American Civil War (1861 - 1865) and became unusually interested in the welfare of black people who had been freed from slavery during the war. He helped to build hospitals and started many schools

for black people. Howard's University in Washington was open for any students, but was founded with a special obligation to provide advanced studies for black people.

In World War II, Drew's Red Cross set up blood donor centres. However, the Army said that it would not let black peoples blood be used on the soldiers. After considerable protest, blood from black people was collected, but kept separate from white people's blood.

On April 1st 1950, Drew was badly injured in a car accident at Burlington, North Carolina. In desperate need of a blood transfusion he was rushed to the nearest hospital. The hospital was using his discoveries, but turned him away because he was black. He died on the way to a hospital for blacks.

- 1) Find out and write down the meaning of the words: unexpurgated, ghetto.
- 2) Look back at how you have described Charles Drew from what you read in the previous section. Have your ideas changed? If so, explain how they are now different.
- 3) What emotions or feelings do you have after reading this passage? Try to write five things that you feel.

[For examples of pupils' work arising from these interventions, click here.](#)

Chapter Four

Discussion of Findings: Repertory Grid Analysis

The analysis of the Repertory Grid data took the following form. With the first tranche of grids (data 1) the Ingrid and Series programmes were used to elicit the basic information about each individual and each of ten groups - five target groups and five control groups by subject. This initial analysis showed that the values as constructs were meaningful to the pupils, and that each of the elements selected fell within the range of convenience for those constructs - in other words each of the school's values was relevant to the subjects being studied. The rating of the constructs was generally towards the positive pole (i.e. being fair) of the constructs rather than the negative pole (being unfair) and there was a range of scores of 4, which was designated as 'neither pole matters'. No further analysis was undertaken at this point.

After the second tranche of Repertory Grids was elicited from the pupils it was possible to analyse the data from a number of perspectives. Four individual's data was deemed 'null', one because the pupil did not fill in the questionnaire properly and three because of absences.

4.1. Analysis of Data

The first stage of analysis was to draw up a basic table for each of the target and control pupils using INGRID and DELTA output. An example is shown in table 1 below.

tgt	PupilX	M1	M2	DIFF	VAR1	V2	DIF F	AS%1	AS%2	DIFF	R1		CORRELATION
	1	3.500	2.900	-0.600	34.5	40.9	6.4	15.668	19.032	3.36	1.41		0.3091
	2	4.700	3.600	-1.100	36.1	42.4	6.3	16.394	19.73	3.34	1.475		0.7273
	3	3.600	2.000	-1.600	36.4	12	-24	16.53	5.584	-11	1.488		0.6848
	4	2.900	1.900	-1.000	28.9	14.9	-14	13.124	6.933	-6.2	1.181		0.7455
	5	3.500	3.700	0.200	14.5	26.1	11.6	6.585	12.145	5.56	0.593		0.903
	6	3.300	2.100	-1.200	26.1	4.9	-21	11.853	2.28	-9.6	1.067		0.697
	7	2.900	2.800	-0.100	4.9	15.6	10.7	2.225	7.259	5.03	0.2		0.8848
	8	3.600	3.500	-0.100	24.4	38.5	14.1	11.081	17.915	6.83	0.997		0.7394
	9	2.400	1.800	-0.600	14.4	19.6	5.2	6.54	9.121	2.58	0.589		0.8182
					220.2	214.9							
		TOTAL VARIATION ABOUT CONSTRUCT MEANS										GEN DEG CORR	0.7232

The mean of each pupil's rating score on each construct (1-9) was calculated for the first and second grid (M1 and M2) and the difference between them. The same was done for the variation around the mean for each construct for the first and second grid (V1 and V2), and for the variation as a percentage of

the whole (AS%1 and AS%2). The figures for the variation as a ratio were available but these were not used. Finally the first and second grids were put through the DELTA program which gave a correlation statistic that measured the degree of correlation between the first and second grid by each of the nine constructs, and a general degree of correlation for the whole grids. This basic data then enabled the sample to be examined by groups of control and target pupils as a whole, and as subgroups according to subject.

4.2. School Values as Constructs

The constructs, drawn from the school's core values, were numbered as follows:

Number as Construct	School Value	Core Value as Construct
1	Truth	Being truthful - not being truthful
2	Stewardship	Taking care of people & things - not taking care of people & things
3	Forgiveness	Forgiving - not forgiving
4	Justice	Being fair - not being fair
5	Faith in Christ	God - not God
6	Fulfilling our Potential	Doing my best - not doing my best
7	Trustworthiness	Trusting and being trusted - Not trusting and being trusted
8	Valuing ourselves	Respecting myself - not respecting myself
9	Valuing others	Respecting other people - not respecting other people

4.3. Pupil X: Science and Truthfulness

In this example the pupil shows some distinct changes in the mean score per construct for most of the constructs. The pupil was a member of the target sample for Science in year eight. What can be understood from this grid is that after the teaching and learning interventions her average rating on construct one changed from a mean of 3.5 which meant that in her perception truth was not very closely connected to science to a mean of 2.9 which meant that her perception after the teaching and learning interventions was that being truthful was more closely connected to science. The variation around the mean increased from 15.6% on the first grid to 19.032% on the second grid.

The degree of correlation between her ratings on 'being truthful' before and after the teaching and learning interventions was 0.3091. Given that a correlation score of 1 means that there is no difference between the two, this score indicates quite a large degree of change on this construct.

It is possible to assert that for this pupil her use of the construct of truthfulness - untruthfulness had increased, and that the direction of that change was towards the value of truthfulness, rather than untruthfulness or the irrelevance of truthfulness to science. If truthfulness can be understood as a core value, which has spiritual, moral, social and cultural aspects to it, and if changes in the use of that core value can be construed as an intended 'development' then it can be argued that spiritual, moral, social and cultural development has taken place. To understand whether that 'development' was likely to have been spiritual, moral, social or cultural one would have to examine the processes of teaching and learning which were taking place during the interventions. An examination of the qualitative findings of the research has an explanatory role at this point. Two of the agreed outcomes from the teacher researchers, including Science, were that

- Values interventions add a spiritual dimension to lessons because they encourage a reflective searching for deeper meaning to events and issues.
- Values interventions appear to encourage pupil responsiveness. This may be because they engage the whole child as a learner, including their emotions, their spirituality and their sense of activism.

4.4. Pupil Y: French and Valuing Others

Another example is Pupil X, a year ten French student from the target group. Her basic data is shown in the table below:

t	pupilY	M1	M2	Diff	V1	V2	Diff	As%1	As%2	Diff	Ratio	Ratio	Correlation
1		2.400	1.500	-0.900	14.4	8.5	-5.9	10.596	11.565	0.97	0.954	1.041	0.8848
2		3.700	1.700	-2.000	28.1	4.1	-24	20.677	5.578	-15.1	1.861	0.502	0.5879
3		3.100	2.500	-0.600	10.9	10.5	-0.4	8.021	14.286	6.27	0.722	1.286	0.9273
4		2.300	2.100	-0.200	10.1	6.9	-3.2	7.432	9.388	1.96	0.669	0.845	0.9758
5		4.300	4.300	0.000	8.1	10.1	2	5.96	13.741	7.78	0.536	1.237	0.8788
6		2.900	1.900	-1.000	20.9	12.9	-8	15.379	17.551	2.17	1.384	1.58	0.8909
7		2.400	2.000	-0.400	20.4	6	-14.4	15.011	8.163	-6.85	1.351	0.735	0.9152
8		2.900	2.400	-0.500	12.9	10.4	-2.5	9.492	14.15	4.66	0.854	1.273	0.8485
9		2.300	1.700	-0.600	10.1	4.1	-6	7.432	5.578	-1.85	0.669	0.502	0.8667
TOTAL VARIATION ABOUT CONSTRUCT MEANS					135.9	73.5					GEN DEG CORR		0.864

From this data it can be seen that the mean for Pupil Y's rating of the construct of valuing others has changed from 2.3 to 1.7. This indicates that in her perception the core value of respecting others has become more closely connected to aspects of her French learning after the interventions than before. The variation around the mean of that construct has actually reduced for the second grid. This can indicate that she is actually using the construct in a less discriminating way in fact she is using it less. However since a score of 1 indicates the quality of 'goodness' on this grid it could mean that she is more definite in her mind about the relevance of 'valuing others' in her understanding of French. The correlation between the ratings of the two constructs on the two occasions is 0.8667, which means that there is a difference between the two scores.

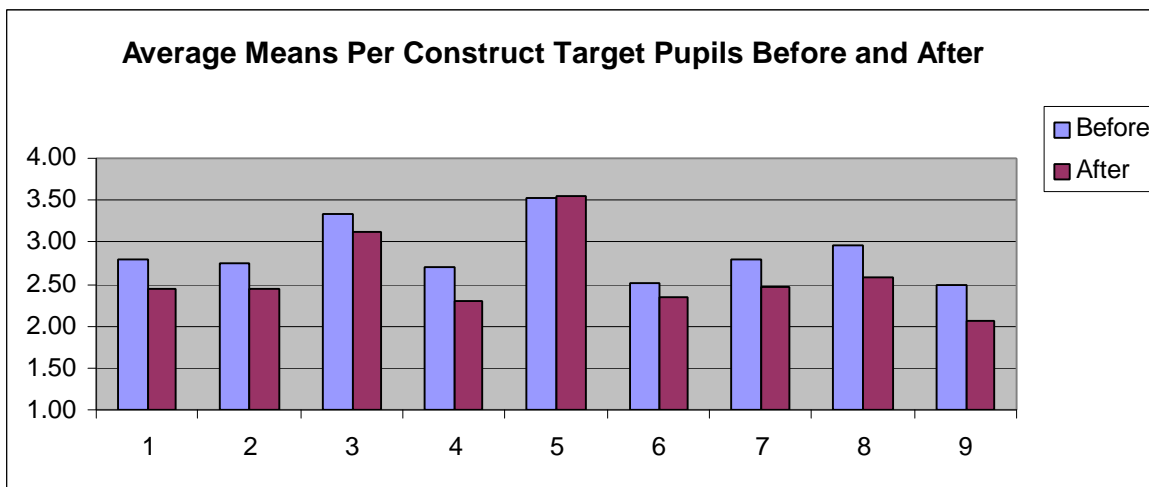
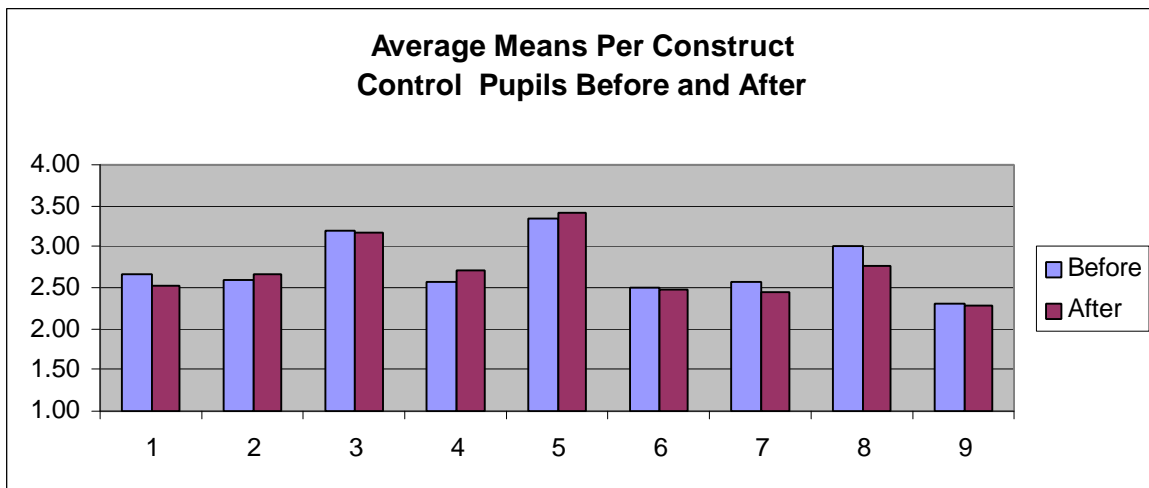
Overall, the mean scores of the constructs have moved towards the emergent pole of the construct (towards a score of 1) apart from the construct of God and not God. This indicates that she continues to see the construct of God as not very relevant to learning French although a change in the variation around the mean from 5.96% to 13.741% indicates that she is actually using the construct with more discrimination after the teaching and learning interventions.

4.5. Significance of Findings

The data on each pupil and on each group of pupils by subject is interesting, and can be seen to be consistent with the qualitative findings of the study. It offers profitable ways of understanding and explaining what has been happening with each pupil during the five sets of teaching and learning interventions. However it is important to look at the data as a whole in order to see what the overall patterns are and whether there are any statistically significant changes.

4.6. Control and Target Pupils from the Whole Population: Average Scores

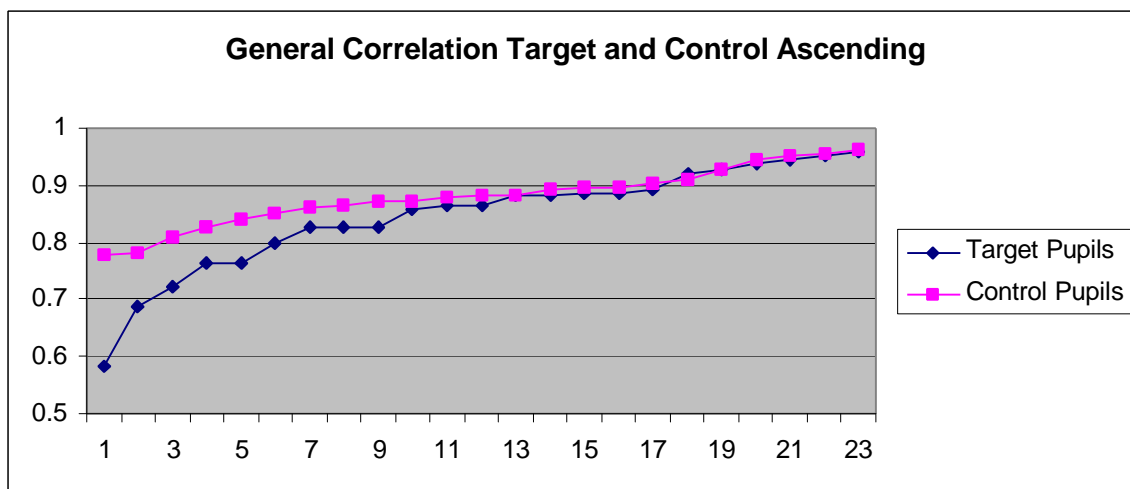
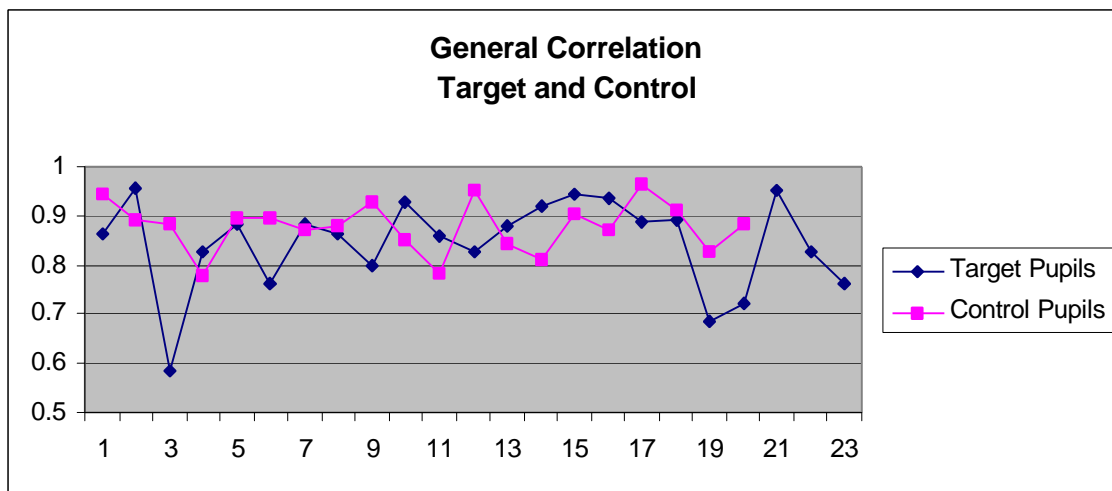
The following tables show the Average means per construct before and after the teaching and learning interventions for 23 target pupils and 23 control pupils. These are means of means, and by definition the score becomes more averaged out, and less extreme.



From these tables it can be seen that there is more change towards the emergent pole of the constructs (the rating of 1, or the 'goodness' end of the values) amongst the target population as a whole than there is in the control population as a whole. However, to get some statistical indication whether there is reason to believe that this change could be due to the teaching and learning interventions or to chance, it was necessary to undertake further tests.

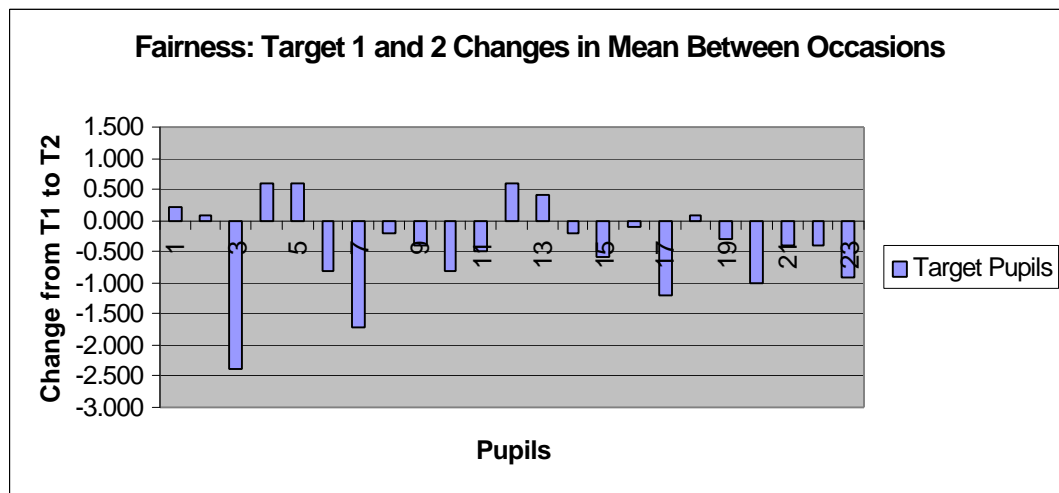
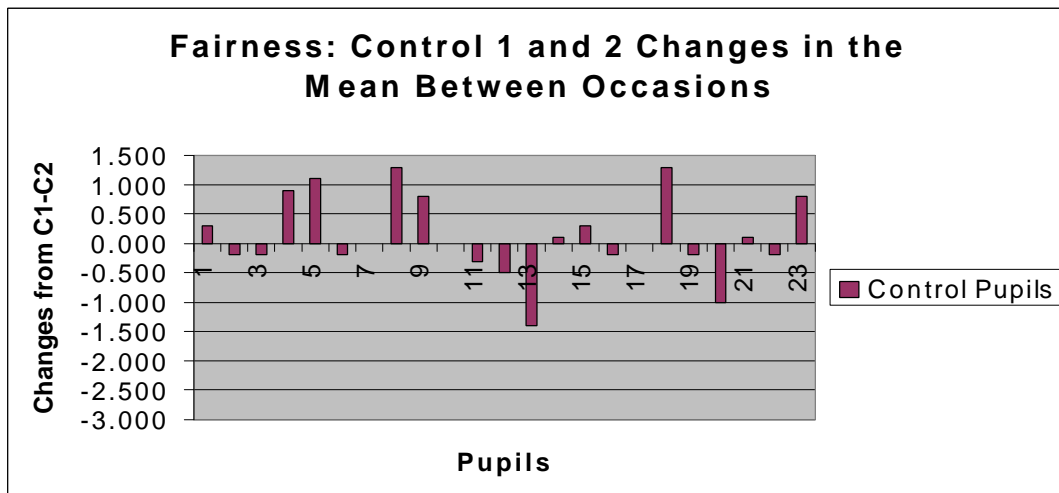
4.7. Control and Target Pupils: Correlations

The General Correlation figures (a measure of sameness and difference) for the before and after grids of 23 Target and 23 Control pupils was also subject to a T Test to discover the likelihood of the changes between the two groups being due chance or to some other factor. The T Test applied to the control and target figures returned a probability of 0.13 that the two samples came from the same population. In other words there is a 13% likelihood that the two groups come from the same population and that the differences between them are random. Whilst this figure is low, it is not statistically significant. Tables showing the general correlation figures are presented in two forms below, the first in alphabetical order of pupils in the group, the second in ascending order of correlation within each group.



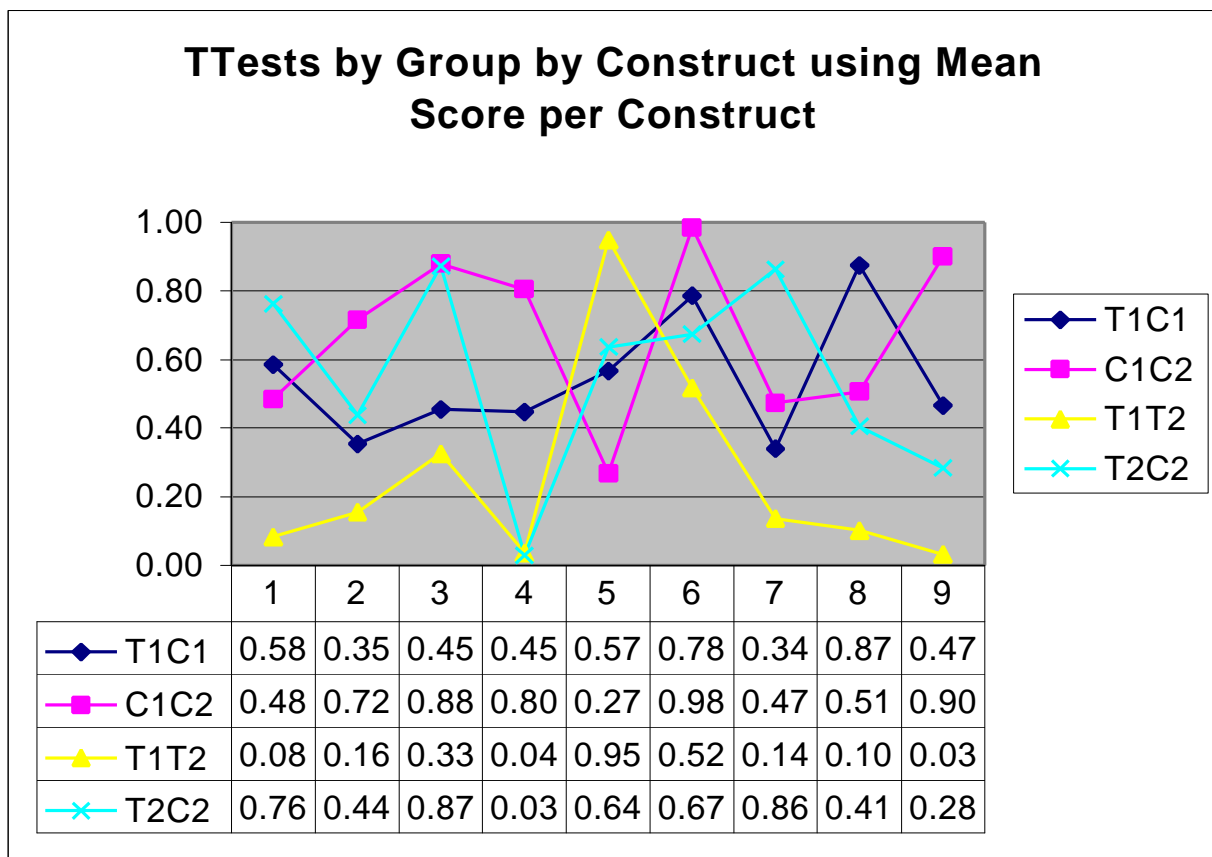
4.8. Looking at the Whole Population in terms of each Construct

A detailed examination of the data by each construct revealed more sensitive information, which enabled the researchers to make judgements about the ways in which the control and target groups of the population used each value as construct before and after the teaching and learning interventions. This data can be displayed in various formats, including lists of mean scores for each construct by target and control group. A useful way of presenting the changes between the target and control pupils before and after the teaching and learning interventions for each construct is shown in the table below. The chart shows the amount and direction of change in the mean score by pupil in the target and control groups for the construct of being fair /being unfair. Changes above 0 refer to changes towards the contrast pole of the construct i.e. being unfair, whereas changes below 0 refer to changes towards the emergent pole of the construct i.e. being fair.



The information gained from this analysis was set into four groups of average means per construct for Target and Control Groups. The two-tailed T test was selected as a simple test that is able to analyse two arrays of data to give a percentage probability of the two samples coming from the same population.

For this analysis the mean scores per pupil for each construct were calculated and allocated into four sets - Target Pupils before the interventions (T1), Control Pupils before the interventions (C1); Target Pupils after the interventions (T2) and Control Pupils after the interventions (C2). Scores for each of the nine constructs were thus available in four combinations and were subjected to a two-tailed T Test. The results of the T Tests are set out in the table below:



From these tests, the statistically significant results are found in the combination of the Target pupils before the teaching and learning interventions and the Target Pupils after the teaching and learning interventions (T1 T2, C1 C2). This is an expected result. The T Tests indicated that Target Pupils before the interventions and the Control Pupils before the interventions were very likely to have been the same population and the Control Pupils before the interventions and the Control Pupils after the interventions were also very likely to have been the same population. An apparent anomaly was found in the results of the T Test of the Target Pupils and Control Pupils after the interventions. Here the results indicated that it was likely that the two groups did, on eight out of ten constructs, come from the same population - in fact the expectation would have been that they should be different. However on examination of the figures it became clear that relative to their starting scores, the control group had remained broadly the same over the two occasions. However the Target Group had in fact changed in a direction which firstly moved towards the Control Group, then

crossed over it and moved away, but resulting in a position which was still apparently deemed by the T Test to be within the same population.

A probability score on the T Test of 0.05, taking into account the degrees of freedom indicated by the size of the sample, was deemed to indicate some significance. A five- percent chance of the two groups coming from the same population indicates that it is likely that some thing other than chance will account for the differences. The two constructs which scored at this level on the test (T1 and T2) were Valuing Others and Fairness, with Truth coming very close with a score of 0.08.

The constructs of God - not God and doing my best -not doing my best scored the lowest, with the high probability that the two samples came from the same population. All of the other constructs scored with a low probability, though they did not have statistical significance.

From this data it can be seen that there have been changes in the ways in which the target pupils used the core values as constructs after the teaching and learning interventions which were greater than changes in the control groups. These were often changes in mean score towards the 'goodness' end of the construct, and also changes in the amount of discrimination in the ways the constructs were used in relation to the elements. Some of these changes are statistically significant.

It can therefore be argued that planned teaching and learning interventions in the taught curriculum which promote core values which are intrinsic to the subject and to the teaching methodology can lead to changes in the ways pupils construe those core values in relation to the subject. To the extent that increased thinking about, and increased quality of the perceived relationship between 'justice' and 'geography' can be argued to entail spiritual, moral, social and cultural aspects and processes, then these changes can be seen as spiritual, moral, social and cultural development of pupils within the curriculum.

4.9. The relationship between interventions and changes in repertory grid data.

4.9.1. Science:

During the interventions all of the values were visited to some degree, although some were visited more regularly or more effectively than others. Those that were dealt with most effectively or regularly were; being truthful, respecting myself, respecting others, and being fair. The value that was addressed least was faith In Christ.

Six of the nine values showed a decrease in mean score for the target pupils, alongside an increase, or no change in the mean score for the control pupils. These were truthfulness, taking care of other people/things, being fair, trusting and being trusted, respecting myself, and respecting others. A decrease in the mean score for a value indicates that the pupils perceive there to be a

stronger connection between the value and science after the interventions compared with before the interventions. The values that showed such a decrease included all the values that had been given the strongest emphasis during the interventions.

Five of the nine values showed an increase in variation for the target pupils, indicating that pupils were giving more thought to the way that they connected these values with science. These five were; being truthful, being fair, doing my best, trusting and being trusted, and respecting others. However, two of these, being truthful and trusting/ being trusted, also increased in the control group.

Overall, the four values that showed the greatest change were; being truthful, being fair, trusting/being trusted and respecting others. Three of these correspond to values that were most strongly targeted during interventions, while trusting/being trusted altered despite only limited intervention. Respecting myself, which was strongly targeted, showed only limited changes.

4.9.2. Music:

The analysis of the mean scores of the constructs for the target and control pupils in the Music sample indicated an increased awareness of all the constructs in both the control and target groups, with the exception of a very slight variance in the case of the control groups understanding of 'God'. In the case of all the constructs except 'trust' and 'self-respect' there is a significantly greater increase in the target groups awareness of the constructs when compared to the control group.

Analysis of the use of each construct shows that there is a falling off in the use of each value, except that of 'respecting myself', in the control group. In the target group use of 'being truthful', 'taking care of people and things', 'being fair', 'trusting and being trusted' and 'respecting myself' increased.

Comparison of two identical twins, one in the target and one in the control group is revealing. In all cases the target twin shows a significantly greater awareness of the constructs except for a drift away from the construct 'God' which is mirrored by both girls.

Some constructs, which had been emphasised over the year, appear to be more used by the target pupils than those which had featured less prominently, for example 'taking care of people and things', 'being fair' and 'trusting and being trusted' compared with 'God' and 'forgiving'.

4.9.3. Geography:

In the geography group the analysis of the Repertory Grid data showed an increased use of the constructs of doing one's best, trust, self respect and respecting others, God and forgiveness in the target group. Use of some of these was also raised in the control group, but here there was an increased connection between the values of respect for one's self and others, doing one's best and trust, but a decrease in connecting God and forgiveness with equivalent aspects of the curriculum. Both target and control groups seemed to show less connection of use of truth, forgiveness and stewardship with the subject.

In the early part of the year the class had interventions which focussed more on the content of the geography curriculum, covering the values of stewardship, fairness, forgiveness and respecting others. Truthfulness was covered in one lesson at the same time as covering aspects of belief in God and was much less explicitly looked at than most other values.

The general shift toward relating taught elements of geography with the values of respecting one's self and others, trust and doing one's best were emphasised more frequently and concentrated in the latter part of the year, closer to the second data collection. This took place within a topic looking at the growth of Bristol and included fieldwork, group work, and presentations. Several opportunities were taken to review the impact of individual behaviour on others and this seems to have had some more influence on the pupil relation of the school values to their lessons than the earlier work which was more specifically content related.

The results showed a general shift, although the extent of the differences measured on the five target pupils was not as great as might have been expected from the responses in class. There was also a more significant shift in the use of constructs of trust and self-respect in the control group than was seen in the target group, although both the target and the control group were making strong connections with these values and the curriculum in the first questionnaire.

4.9.4. Religious Education:

Of the constructs open to exploration I focused on five. These being truth, Forgiveness, Justice, Faith in Christ, Trustworthiness. Three of these five showed a positive recognition of the value explored and as a result the mean score reduced. For example pupils decided the value had much to do with the issue this pattern also emerged when compared to the control group. The three main values mentioned were: trusting and being trusted, being fair/unfair, being truthful.

Trusting and Truth

The values of trust and truth were incorporated into a number of lessons on marriage. The lessons had a number of themes one of which drew upon the symbolism of the ring and another practicalities of marriage in the 1990's. The results show the target group recognised the significance of trust in marriage more than the control, in addition the control groups opinion on its significance remained static.

Justice

A similar pattern emerged in relation to justice. A shift in emphasis occurred, thus pupils in the target group recognised more readily the significance of justice. Lessons, which included themes of justice, related to baptism (infant vs. believers), death, marriage, divorce and those incorporating group work.

Negative Scores

Faith in Christ proved to have a more negative mean score in the target group. A number of explanations for this are possible. In the target group there were focused and heated discussions about the existence of God. Experience of sensitive issues relating to marriage, divorce and death can also leave pupils feeling vulnerable at a time when many of them are actively questioning religious belief. However the variation about the mean was greater in the target group which indicated that these pupils were using the construct with more discrimination than the control group, considering its implications and making value judgements accordingly.

4.9.5. French:

The constructs which were focussed on in French were; Respecting other people (9) Respecting myself (8) Taking care of people and things (2) Being truthful (1).

Constructs 8 and 9 were very much focussed upon in the topic of food. The initial relation to the idea of "foreign" food was quite negative and some time was spent on discussing the importance of trying new things and respecting other people's likes and dislikes. "European " menus were drawn up, which included reasons why people should try to learn about other cultures. The graph of the target group shows that the pupils were more aware of constructs 8 and 9 in the topic of food after having experienced the interventions whereas the control group graph shows little or no change. My approach to this topic was very different to how I normally approach it. I feel that a lot more could have been drawn from this topic eg; extension of foreign dishes to different customs and traditions, respecting one's own identity but also the identity of others and their beliefs.

The teacher researcher also tried in this topic to introduce construct 5 (God) which shows as a little change on the graph of the target group, before and after. However, evidence that the intervention did have an effect on some pupils is evident in the pupils' work shown in the appendix to Chapter 3.

The question from a test on food “Does bread have any other significance for you?” prompted several positive answers from pupils. The pupils who answered positively were not all from the target group. A greater change may have appeared on the graph, had the whole class been included in the target group.

In the control group, the mean average of construct 8 increased slightly and the mean average of construct 9 decreased, but not as significantly as the drop in the mean of construct 9 in the target group.

Construct 2 focussed heavily in our element entitled “Creating your own environment”, where the pupils were given free rein to decide on the needs of a new community. Again I used a totally new approach here and the graph of the target group (construct 2) shows not only a positive mean shift from before and after the intervention, but also a much greater shift compared to the results of the control group graph (construct 2). The interventions were very easy to introduce into this topic.

There are also small changes in constructs 3 and 4, both in the before and after results of the target group. There are also significant changes when compared to the results of constructs 3 and 4 in the control group. The changes here may be due to the fact that some time was spent on the idea of “forgiveness” and “being fair”, not only in the element “Creating a new community” but also in the element “Making a complaint in a shop”. Although these constructs were not discussed for any length of time, they were introduced as “undercurrents” into a dialogue in French taking place in a shop. It does seem however, that they still had an effect on the final results.

Chapter Five: Conclusions

5.1. Teaching and Learning Strategies:

The following teaching and learning strategies were identified prior to the research as potential means of introducing questions of spiritual, moral, social and cultural values into lessons and were used successfully by the teachers in the intervention lessons. This was the result of involving groups of teachers in brainstorming ideas that could stimulate teacher researchers to develop their own interventions.

- Class debate about values content of topic i.e. road planning and justice
- Explicit references made in class to school's values in relation to curriculum theme. Use of official school language as well as using alternative explanations in different language. The aim of this strategy is to increase the capacity of the pupils to engage in the discourse of values in relation to the whole of the curriculum.
- Developing group work to promote 'valuing others' – one pupil is designated as a non-participant observer of how the group works together. This person is then required to feed back to the group their observations.
- Set group work and only one member's work gets the mark for the whole group, stimulating support for the weakest member – this also reduces marking!
- Make explicit connections between pupils' own experience and the value being promoted – for example a pupil's own experience of discrimination may provoke empathy with those on the receiving end of injustice in learning material, thus making learning personally meaningful, and provoking a whole person response.
- Build in a strong reflective element on what is taught and what has been learned – which can be assessed as a piece of writing.
- Make the fragment of learning a part of the whole – for example enzymes are parts of human bodies which have people in them etc, or we learn German so that we can communicate with Germans who are people with histories, loves, hates, differences, faith etc.
- Making connections with the larger issues of life. Contextualise the information as part of the whole of life.
- Use of real and imaginary stories and biography to bring out questions of value, and to stimulate interest, connection and meaning.

- Connecting with popular culture – film, books, and music to draw out values issues.
- The school value of ‘faith in Christ’ can be used with all the other values. For example does faith in Christ make an impact on how we value ourselves, or treat each other or respond to injustice, or truth in science, geography?

5.2. Aims of Values interventions

During the phase of research while teachers were devising and delivering 'values interventions' three sessions of discussion and feedback provided ongoing dialogue and clarification about what was intended and what was being achieved. Comparisons were made between interventions in different subjects, and some key aims and issues were identified.

The teachers agreed that values interventions were intended to:

- Achieve explicit student understanding about the meaning and relevance of the value.
- Achieve student ownership of the value i.e. an emotional commitment to the value plus an application of the value.
- Encouraging students to ‘live out’ or put it into practice in the wider context of their lives.
- Encourage students to make connections between values learning and existing experience.
- Encouraging students to make connections between the values and wider knowledge.

5.3. The Value of Dialogue and Discussion

A common theme appearing in all the interventions was the value of discussion and dialogue during which the pupils were able to make connections between the specific value and the wider world, and between the specific value and the pupil’s personal experience.

Teachers drew upon Hanham’s work which suggests that educative discussion moves through three phases – from the descriptive, through to the reflective (asking why) and then through to the speculative (making wider connections, applications and hypotheses). This was seen as a useful tool for structuring the discussions, which occurred either in groups or with the whole class as part of the interventions. The evidence of pupil learning in making the connections with issues of values in the subjects was described in terms of something pupils said or wrote.

5.4. Multiple Intelligence Theory

The relevance of Multiple Intelligence Theory to values interventions was discussed. It was thought to offer valuable insights because it (MIT) addresses the whole child's range of learning styles and intelligences (not just

the cognitive) and recommends that pupils have differing preferred learning styles and therefore teaching should be structured accordingly.

This approach to values education addresses the whole child, and some aspects of values education i.e. spiritual, moral, social and cultural development draw upon a wider range of intelligences. For example reflection (mentioned above) draws particularly upon intra personal and inter personal intelligence, as well as linguistic and musical intelligence.

5.5. Outcomes

At the end of the research phase the teachers spent some time identifying those outcomes which could be validated with evidence from their observations, experience, assessment of pupils and from the Repertory Grid investigations and the questionnaires and interviews. These outcomes were then categorised into three main groups: Making Connections; Pupil Development and Holistic Curriculum.

There was some difficulty in finding appropriate language for the 'making connections' category. On the one hand it was recognised as a key feature of values education as defined in this project but on the other hand the teachers felt that they lacked the language to describe more precisely what they had observed and experienced.

Twelve Outcomes are listed in three categories below:

Pupil Development

5.5.1. There is a strong consensus amongst pupils in this school on the importance of the school's core values.

This was evidenced through discussion and dialogue and from the findings of the Repertory Grids. The core values were identified as a result of a school wide consultation and investigation during the previous year, and the consensus surrounding them provided a sound basis for the teaching and learning interventions. They form part of the school's vision and provide a frame of reference for the content and process of spiritual, moral, social and cultural development that is envisaged in the school.

5.5.2. There is, however, often a gap between pupils' espoused values and those in practice.

There was a noticeable gap between what pupils thought and felt was important in terms of values and the behaviour they exhibited at times. This was considered by the teacher researchers to be part of the human condition and underlined the importance of dialogue and vision.

5.5.3. After two terms of values interventions pupil's moral and spiritual vocabulary had increased and they were more readily able to express their thoughts in this dimension.

This was evidenced through teacher observation and in the semi-structured interviews with the target and control pupils in year seven. The focus on dialogue during the interventions included the introduction of new language skills and concepts, and pupils were frequently required to articulate their ideas and views relating to the core values. One observation from the previous year's consultation was that, even with 'A' level sociology students who took part in the consultation programme, there was a relatively poor level of discourse about values issues which required attention before those students could then take part in the programme of consulting others.

5.5.4. Values interventions appear to encourage pupil responsiveness. This may be because they engage the whole child as a learner, including their emotions, their spirituality and their sense of activism and involvement in the community.

An observation made frequently by the teacher researchers was to do with the level of emotional engagement of pupils with their learning in values interventions lessons. Pupils frequently responded with their own value judgements to issues of injustice, or stewardship or the need to value others. It was often appropriate, though not followed up, to develop the intervention into some form of active response - such as writing to the Euro MP, or some other form of community service which built upon the pupils engagement with the issues. There was ample evidence of pupil's searching for deeper meanings and connections which was construed as spiritual development, as it was when pupils' felt anger at injustice or empathy with those who suffered.

5.5.5. Values interventions can influence the ways pupils perceive the school's core values within the content and context of subjects within the school curriculum.

The outcomes of the Repertory Grid work provides evidence that these values interventions did influence the ways pupils used the school's core values in relation to the subject matter of the curriculum as well as the processes of learning in community. Those changes were that pupils generally thought the values were more relevant to the subject after the interventions than before. In so far as a positive intended change can be construed as development, and in so far as the core values can be said to have spiritual, moral, social and cultural components to them, then values interventions can be said to promote spiritual, moral, social and cultural development.

Making Connections

5.5.6. Values interventions require teachers to set their lessons and their subjects in a bigger understanding of how the world operates.

The teacher researchers found that in order to design and deliver a values intervention in their subject they had to move beyond the usual boundaries to more global concerns which might not normally appear in their teaching. For

example exploring the biography of a key scientist requires historical and literary skills as well as empathy, morality and spirituality as well as an understanding of culture. Thus the subject is being located in a bigger system, or a larger landscape than would normally be the case.

5.5.7. *Values interventions add a spiritual dimension to lessons because they encourage a reflective searching for deeper meaning to events and issues.*

Teachers found that the values interventions stimulated genuine discussion about 'ultimate concerns' and pupils often presented their own views on particular issues, whilst being challenged to think more deeply and in different ways about issues such as valuing others, or justice or truth.

5.5.8. *Values interventions encourage critical thinking because they stimulate pupils to make judgements which require abstraction, reflection and speculation. They also encourage an inter-disciplinary transfer of ideas and a holistic perspective on the curriculum.*

The quality of discussion during value intervention lessons challenged pupils to search for meaning beyond the usual confines of the subject and to think about how they think. Taking a specific, practical event such as the building of the Great Western Railway, it was clear that there were differing levels of thinking involved. Firstly description and information about the events, then abstraction of the meaning and implications of the event, then reflection about those implications in the light of the community's commitment to the value of stewardship, and then speculation - the 'what if it had happened differently' sort of questions. This process requires a range of skills and draws upon skills and information more generally located in other subjects of the curriculum other than that being taught. In addition it draws upon ethical and spiritual skills and values. This presents the curriculum as a coherent body of knowledge with associated skills, attitudes and values rather than as a series of discreet subjects.

Holistic Curriculum

5.5.9. *Setting spiritual, moral, social and cultural development in the context of the whole curriculum framework avoids the separation of spiritual and moral development from its real life context. It also facilitates a more holistic relationship between pupils and teachers who attend to more than simply the pupil's cognitive needs*

Dealing with the spiritual, moral, social and cultural issues which are implicit in the subjects of the curriculum in the context of learning about the subject was perceived to be a meaningful and important way of both learning about the subject and developing pupils' spiritual and moral perceptions and skills. Pupils could generally see the relevance of the spiritual, moral, social and cultural issues to the subject, and teachers were able to relate to pupils more

as whole people, with loves, hates, passions, commitments and idiosyncrasies.

5.5.10. These core values can integrate well into the content of the subjects. Interventions can be readily designed (with appropriate resources). They frequently add a new dimension to the lessons because they draw upon wider cultural narratives and traditions and at the same time upon the pupils' own experience of life.

Before undertaking values interventions in lessons teachers needed to spend time familiarising themselves with the school's core values. The nature of these values, and their relationship to the whole school's vision, was explored and interpreted through dialogue amongst the teachers. The teachers did not find it difficult to design values interventions - the material is implicit in the subjects and in the processes of teaching and learning. However it often required the production of resources that was time consuming. Teachers felt that values interventions added a new dimension to their teaching which they had not encountered before in their training or experience. They described the interventions as making their teaching more purposeful.

5.5.11. There is a significant potential to deliver key aspects of citizenship through values interventions, in particular the components of moral and social development and community involvement. Values interventions are a means of naturally delivering some aspects of Personal and Social Education.

Every intervention delivered some of the key components of Citizenship as defined by the Crick Report and the Qualifications and Curriculum Authority documentation. Each intervention was about moral and social development - although in this project that was not separated from spiritual development. In fact it might be argued that the spiritual component of the values interventions gave meaning to the moral, social and cultural components. The teachers understand spiritual in various ways: searching for deeper meaning and purpose, passionate engagement against injustice, engagement with specific spiritual traditions. For example, if a pupil experiences anger at the injustices experienced by black people during the Slave Trade, then the morality of being just in relationships in school and the wider community is a natural progression which has meaning to the pupil, and some commitment and motivation.

5.5.12. Collaborative teamwork between practising teachers and academic researchers creates a potent research agenda and stimulates teacher professional development.

Finally, this project has developed over two years with a range of people, including students, governors, parents and teachers and it has had serious commitment from the head teacher and senior management team of the school.

At all the stages of the research design and implementation the meetings were school based and the research was incorporated into the school development plan. Teacher research, academic researchers and the Senior Management Team worked together to meet the school's needs. All meetings were attended by all parties. The Values Research team was given high profile by the Senior Management Team and through the School Development Plan and therefore the research was widely accepted and supported.

The Teacher Training Agency research grant has enabled five teachers, during the second year of the research, to develop in-depth work in the application of the core values to the classroom. In addition, through various charitable sponsorships, an education researcher has been able to put a significant amount of time into the project working with the teacher researchers, stimulating and developing the programme. This collaborative approach has been viewed by the whole team as immensely productive, resulting in real input and changes for the school and its pupils as well as the development of key ideas as part of the research agenda. This has implications for teacher professional development and for research focused on improving teaching and learning outcomes through the collaboration of practitioners and researchers.

5.6. The Ecology of Spiritual, Moral, Social and Cultural Development

It is interesting to note that the theme of 'connections' was pervasive in this project and many of the specific outcomes related to the idea of connecting things that would otherwise be seen separately. This was difficult to define but was considered by the researchers to be something approaching an understanding of the ecology of spiritual, moral, social and cultural development. There was a broad theme of enabling pupils to make connections between their own stories and experience, the wider traditions and cultural stories of the communities and the world in which they live in the context of their own development as learners, addressing the specific content of the curriculum.

The teachers found that developing the teaching and learning interventions through a set of core values which were drawn from the school community's vision encouraged them to think about the curriculum as a whole, rather than simply from the perspective of their own subject. This holistic perspective enabled them to set their teaching in the context of the particular vision of the school, which made the curriculum more meaningful and gave teachers a greater sense of purpose.

The research team considered Wright's (1998) definition of spirituality to be an apposite description of the theme of this research:

'Spirituality is the developing relationship of the individual, within community and tradition, to that which is - or is perceived to be - of ultimate concern, ultimate value and ultimate truth.' P88

Appendix Two

Details of Personal Construct Theory and Repertory Grid Technique

The purpose of this research project was to find out whether pupils' perceptions and use of the school's espoused values can be altered by specific interventions in teaching and learning when the values are explored in depth in relation to the subject being taught and become learning objectives in lesson planning and evaluation. In order to find out whether any change has occurred in pupils' perceptions and use of the school's values it is necessary to use some kind of technique to analyse those perceptions before and after the interventions. The research team decided to use the method known as the "repertory grid technique", a technique devised by George Kelly (1955).

At the time Kelly was working, the then current theories of personality were very loosely defined and difficult to test. Any psychological observations of a person tended to be biased by the person making those observations, and results were always interpreted in the light of the theory which was favourable to the observer (e.g. Freudian, Jungian etc.). Kelly wanted to develop a theory, and an investigative technique, which would remove the influence of an observer's frame of reference on what was being observed.

Kelly developed what is known as Personal Construct Theory and at the same time a technique for analysing a person's construct system called Repertory Grid Technique. The details of this personal construct theory are complex, and can be studied in a wide range of literature e.g. Bannister (1970, 1977); Bannister and Fransella (1971). In simple terms, personal construct theory suggests that each individual is actively engaged in making sense of, and extending, their experience. Each person has a set of constructs, which might be thought of as models, or hypotheses, or representations that each person has made about their world. By using the repertory grid technique, one is able to find out, without subjective interference from the interviewer, how a person relates or construes these constructs in relation to certain elements.

In the case of this research, the constructs are the espoused values of the school. These values have been arrived at by extensive research over the previous year. The research team carried out extensive interviewing (including use of the repertory grid technique) of the various communities which make up the school. These included the staff (teaching and support), pupils, parents, and governors. Details of this process have been reported elsewhere (Deakin Crick, R et. al. 1998). According to Horley (1991) the terms "values" and "constructs" can be used interchangeably. The elements to which these values will be related through the Repertory Grid Technique will be a whole variety of themes taken from the schemes of work in the subject areas which are being studied. More detail of this will be given later in the methodology section.

In many ways, Kelly was out of his time. His concerns for rigour in his psychological theories were not shared by most of his contemporaries. His theory needed complex mathematical modelling at a time when rapid data

processing was not possible. For this reason it remained at the time rather an obscure theory. However, in the 1970's there began a resurgence of interest in Repertory Grid methodology. More literature began to be written on the subject including Bannister (1985) and, in relation to teaching in particular, Pope and Keen (1981).

When looking for ways in which the Personal Construct Theory and Repertory grid technique are being used at the present time it is apparent that it is becoming a widely used and respected technique in all kinds of areas. There are a number of web-sites devoted entirely to the repertory grid process. For example, the "Enquire Within" web site (<http://www.enquirewithin.co.nz>) contains a wide variety of information on business applications of Repertory Grid, as well as its use as a tool in education and has for sale software for grid analysis. Also, details of personal construct psychology journals and associations in Europe and America can be found on <http://www.ksi.cpsc.ucalgary.ca>.

A search on the Internet for educational research being carried out also shows that it is a technique being used in a wide variety of contexts e.g. see Winer, L.R. and Vazquez-Abad, J (1995); Pope M, and Denicolo P. (1993); Solas, J (1992).

Personal Construct Theory and Repertory Grid technique

Kelly worked as a teacher and as a counsellor and his theory grew out of his need to understand, predict and have an effect upon his clients and his students. One of his major contributions was to insist that the need to understand, predict and have an effect upon was not simply a need of scientists, but is a fundamental attribute of the way persons exist in the world. Understanding the other person was to Kelly achievable only in so far as one can know how that person goes about making sense of his or her world. Each individual has a personal construct system, which is a developed set of representations or models of the world. Some of this is developed through social experience, some of it is pre-verbal and some of it is verbally transmitted although not all of it is readily accessible to the individual in terms of self-consciously held concepts. For all individuals this construct system is to some degree shared with others and to some degree unique to the individual.

Unlike other psychological theories Kelly presented personal construct psychology as a complete and formal statement of a theory. It is a reflexive theory that attempts to redefine psychology as a psychology of persons, rather than reducing psychology to a static, biological or analytical model. He is not proposing personal construct theory as a contradiction of the other psychologies but as an alternative to them. It does not deny the 'truths' of other theories but may provide more interesting, inspiring and useful ways of using those 'truths'. In this sense it is a useful tool for this research, with its view of the person as a whole, active learner about the world, whose understanding is constituted in the constructs with which the person makes meaning out of his or her experience.

The theory of personal constructs is formally stated as a fundamental postulate and eleven corollaries. The fundamental postulate is that a person's processes are psychologically channelised by the ways in which they anticipate events. This striving for personal meaning leads to the following corollaries

- Construction corollary: a person anticipates events by construing their replications.
- Individuality corollary: persons differ from each other in their construction of events.
- Organisation Corollary: each person characteristically evolves, for their convenience in anticipating events, a construction system embracing ordinal relationships between constructs.
- Dichotomy corollary: a person's construction system is composed of a finite number of dichotomous constructs.
- Choice corollary: persons choose for themselves that alternative in a dichotomised construct through which they anticipate the greater possibility for the elaboration of their system.
- Experience Corollary: a person's construction system varies as they successively construe the replication of events.
- Modulation Corollary: the variation in a person's construction system is limited by the permeability of the constructs within whose range of convenience the variants lie.
- Fragmentation Corollary: a person may successively employ a variety of construction subsystems which are inferentially incompatible with each other.
- Commonality Corollary: to the extent that one person employs a construction of experience which is similar to that employed by another, their processes are psychologically similar to those of the other person.
- Sociality Corollary: to the extent that one person construes the construction processes of another they may play a role in a social process involving the other person.

One of the criticisms of personal construct psychology is that it is purely a description of thinking and thus only deals with one aspect of the person. However Kelly did not accept this dualist approach to cognition and emotion which he sees as a descendant of ancient dualisms between reason and passion, mind and body and thinking and feeling. Personal construct psychology is an attempt to talk about people in a unitary language, and the constructs are not simply words just because the theory itself is systematic, articulate and rational. He defines a construct, not as a thought or a feeling but as a discrimination, it is part of the way one stands towards one's world as a complete person.

This theoretical framework which underlies the repertory grid technique is compatible with an interactionist view of social relations and the social construction of reality, and the anthropological understanding of values,

attitudes and beliefs which underpins this research project. It provides a useful way of understanding how pupils in the school utilise, or make sense of the school's values as constructs.

Repertory Grid - a Research Instrument

Fransella and Bannister suggest that the repertory grid 'is perhaps best looked on as a particular form of structured interview' (1977 p4) which formalises the process of understanding how the other person views their world, what connections there are within their framework and what is important or unimportant - in other words their values. The grid assigns mathematical values to the relationships between a person's constructs and enables the researcher to focus on particular subsystems of construing. It enables us to understand what is unique and surprising about the structure and content of a person's outlook on the world, and is really a formalised version of the kind of information which human beings are always in the process of eliciting from each other.

The repertory grid was chosen as an instrument for this research because it offered a formalised and structured means of eliciting the ways in which the school's values as constructs are related in the pupil's minds to the actual subject matter of the schemes of work in the subjects being investigated. The repertory grid is essentially a grid whose vertical axis comprises elements which represent the area in which construing is to be investigated and whose horizontal axis represents the differing ways in which the subject construes those elements.

Elements

The five teachers who delivered the values interventions identified the elements used for the Repertory Grids. They examined the schemes of work which were already planned for the pupils during the academic year and identified places where one or more of the school's values was implicit in the subject matter, or implicit in the teaching and learning methodology. They selected at least seven units of work in which one of the school's values, such as justice or valuing others was implicit in the content. For example a unit on the community in French in year ten was deemed to carry implicitly the school's value of 'valuing others' and valuing the environment was deemed to be implicit in a unit on road planning in Geography. Up to three units of work were chosen in which one or more of the school's values were deemed by the teachers to be implicit in the chosen teaching and learning styles. For example group work in music or science was deemed to be an activity in which 'valuing others' was implicit. This dual approach was chosen because the school's values were understood as values which were both 'experienced and taught', and although the focus of this study was on the taught curriculum, the curriculum was not narrowly defined as content only, but included the planned experiences of learning. These units of work were given a recognisable label for pupils and provided a set of ten elements representing the domain in which the investigation was to take place.

A list of the elements selected can be seen in table 1 below.

Science	Religious Education	French	Music	Geography
Ideas about space	Coming of age – confirmation	Creating an imaginary community	Appraisal and assessment	Planning a new road
Seeing and Hearing	Stages from birth to death	Making a complaint in a shop	Notation	Changing or conserving a landscape
The Bloodstream	Baptism past and present	Describing your local area	Tonality	Shops and Shopping
Energy	Baptising babies and adults	Giving information about shops	Treble and Bass	Following directions, longitude and latitude
Ideas about space	Marriage and Symbolism	Working in groups	Dance Music	Studying the underground map
The Water Cycle	Divorce	Making friends	The Blues	The growth of Bristol
Nuclear Fuels	Marriage in 90s	Discussing food and eating habits	Listening	Development of the Great Western Railway
Energy Conservation	Working together in Groups	Describing leisure facilities in your area	Small group practical work	Following a trail around Bristol City Docks
Science Investigations	Christian burial	Shopping for different items	Song Writing	Presenting findings from Bristol City Docks
Working together in Groups	Life after death	Ordering meat in a restaurant	Harmony	Learning about the shape of the earth

Constructs

For this research the school's core values were used as constructs in the formation of the Repertory Grids in order to identify whether or not the values were used by pupils in relation to the content of the curriculum. The school's values were formalised the previous year into language which was considered to be most accurate in adult terminology, although the sort of language the pupils used for the same values was often different. For example pupils would use the term 'fairness' instead of 'justice' or 'caring for things' rather than 'stewardship'. The Repertory Grids were administered to groups of five children at a time in the form of questionnaires and thus the language used on the questionnaires needed to be representative of pupil language. Two researchers worked with a group of thirty pupils from year seven to eleven to elicit pupil language for the school's values. This took the form of a class brainstorm of the meaning of the school's formalised values. The results were compared with the data collected the previous year in the consultation process about the schools values that included 900 pupils. As a result the school's values were changed into 'pupil friendly' language as shown in table 2 below.

	School Value	Emergent pole	Contrast Pole
V1	Valuing ourselves	Respecting myself	Not respecting myself
V2	Valuing others	Respecting other people	Not respecting other people
V3	Forgiveness	Forgiving	Not forgiving
V4	Justice	Being fair	Being unfair
V5	Stewardship	Taking care of people or things	Not taking care of people or things
V6	Truth	Being truthful	Not being truthful
V7	Fulfilling our potential	Doing my best	Not trying
V8	Faith in Christ	God	Not God
V9	Trustworthiness	Trusting and being trusted	Not trusting and being trusted

Horley (1991) argues that there is an intimate connection between personal constructs and values and ordinary belief. He defines an ethical value as one type of value, and he describes core constructs as providing a sense of personal identity or selfhood. In this case, the school's values were shown to have meaning for the pupils in the school through the prior process of consultation and investigation. The use of the Repertory Grid in this way is simply a useful means of ascertaining the quality of relationship between the constructs/values and the specific teaching and learning material which formed the domain under investigation.

In this case care must be taken in the application of the findings, since the constructs given do not represent personal construct system of the individual pupils in relation to the elements. However, since the constructs are salient to the pupils this methodology, used in a limited way, can indicate the relevance of the constructs to the elements, and can indicate changes in the direction of the construct (towards one pole or the other) or in the strength of the relationship between the construct and the element.

Because the Repertory Grid looks at constructs and not concepts it is able to look at the relationship between constructs, which are bipolar in nature, and therefore to understand the meanings which the subject is working with. The range of convenience of the constructs refer to the finite number of elements to which a given construct and its emerging pole can be applied. Even though the elements were supplied to the subjects there was not a problem with the range of convenience, although in the rating procedure some constructs were identified as 'not particularly related to' certain elements.

Selection of Sample

The five teacher researchers identified two parallel classes that were taught by themselves and another teacher. The purpose was to find a control class and a target class which would be the focus of the experimental values interventions. Within the constraints of the timetable of a comprehensive

school the classes needed to be as similar as possible in terms of pupil profile, teaching and learning styles and schemes of work. Within these classes five pupils were selected to include both genders, a mix of ability and social status. The total number of pupils forming the target group was therefore twenty-five and the total number of pupils forming the control group was also twenty-five.

Rating of Constructs

The Repertory Grids were elicited from pupils in the target and control groups during October 98. The constructs and elements were put into questionnaire form which was administered by a teacher to a set of five control or target pupils in one session. For details of the questionnaire see appendix 1. The questionnaire was set out with nine constructs on each page with a seven-point scale for each construct. The page began with the question 'How closely related to (the relevant element) are each of the following values? A rating of one indicated that the pupil strongly agreed that the emergent pole of the construct was closely connected to the value, a rating of four indicated that neither really matters and a rating of seven indicated that the contrast pole of the construct was strongly related to the element. Furthermore the constructs all have the quality of 'goodness' in common. Therefore increased salience towards the contrast pole is evidence of greater use of the construct but not necessarily the use desired by the teachers and the community. Equally a rating of all ones may not necessarily indicate a crude personal construct system; it may indicate a construct system where all the school's values are particularly important to the pupil.

Analysis of Data

These papers provided the raw data for the formation of the basic grids which were entered into a software programme called INGRID which forms part of a suite of computer programmes (INGRID, DELTA, SERIES) from Slater's (1972) Grid Analysis Package (GAP) which were available from Dr M Smith at the University of Manchester Institute for Science and Technology.

The GAP package was selected because it gives an extensive and sophisticated analysis of data, based on a principal component analysis. It offers an examination of constructs, of elements, of component space, the nature of components and the drawing of cognitive maps. The software is outdated (not windows based) but was selected over more popular alternatives because the SERIES programme allows groups of grids to be analysed together, and the DELTA programme enables an analysis of change between a 'before and after' grid.

The first tranche of grids were analysed as individual grids and as groups of target and control grids for each curriculum subject. For the purpose of this research the outputs from the data analysis which were considered pertinent were the raw grid, the mean for each construct, the variation about the mean for each construct, and the variation as a percentage. Measures of bias and variability of the basic statistics gave a measure of bias from the mid point of the rating scale and variability gave an impression of how well each pupil

was using the scale. The basic statistics for the elements gave some indication of the ways the constructs were used for each element, and in this case, since all low poles (scores of 1) represent 'goodness' then it was possible to make some judgements about the most distinctive elements (units of work) for each pupil in relation to the constructs (school's values).

The raw data enabled each teacher researcher to make their own judgements about each pupil's construals, and the relevance of their chosen elements in the light of their own experience. The basic analysis of variance enabled researchers to identify which constructs had most meaning for pupils, those with the highest degree of variance were those used to discriminate among the elements, except where the rating scale was used very crudely. The mean showed the direction of the use of the construct overall.

Eliciting the Raw Data from Pupils

Because five teacher researchers administered the grids to two different groups of pupils, care had to be taken to provide a consistent approach between teachers and groups. An interview schedule and procedure was agreed which included three ways for the teachers to reformulate the question without evaluation or providing answers and the teachers agreed to ensure that the pupils understood what was required of them. There were no reported problems with the administration of the grids, except in one case where one pupil did not take the exercise seriously and gave the same rating for each construct. This was then treated as null data.

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