Approaches to Teaching & Learning

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INTO Consultative Conference on Education

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Foreword

These proceedings of the Consultative Conference on Education were published in CD format. The decision to publish on CD for the first time reflects our belief in the potential of technology in education. The CD format allows readers to access linked resources and websites mentioned in the report. In addition, it allows all three topics discussed at the Consultative Conference of 2007 to be published in one volume. Additional copies were published in printed format for the INTO library and archive.

Since the 1970s the INTO has published reports on aspects of the curriculum in the primary school. This work was influential in shaping the Primary School Curriculum of 1999. In this volume, we consider approaches to teaching and methodologies across the curriculum, Physical Education and School Governance.

The Primary School Curriculum states that the process of learning is as important as the content. It is timely, therefore - now that the curriculum implementation phase of the PCSP has been completed - to consider how teachers are engaging with the variety of methodologies and approaches to teaching advocated in the curriculum. According to reports on curriculum implementation (DES and NCCA), regarding English, Maths and the Visual Arts and the INTO's most recent curriculum survey (2005), it is found that there are both positive and not so positive observations regarding our use of methodologies and approaches to teaching. There is evidence that teachers are using guided discovery methods and ICT and they are planning and providing for differentiation, integrating across the curriculum and bringing pupils on educational walks within the environs of the school. Fostering higher-order thinking is proving more challenging. The Education Committee's most recent research, as outlined in this report adds further to our understanding of what's happening in our classrooms.

There is a great emphasis today on the role of schools in promoting children's well-being. Schools are encouraged to be 'active schools', creating an ethos and environment conducive to healthy physical activity.

PE was perceived important enough to set up a Joint Oireachtas Committee on the subject. Its report recommended that the starting point for any future development of PE in Ireland is a commitment to serious investment at all levels. Primary teachers

would certainly agree that this investment is long overdue, justified and necessary. Investment in physical education makes sound financial sense in light of looming healthcare costs from an increasingly unhealthy and inactive population. But regarding the provision of resources and facilities for PE in primary schools, we still have a long way to go.

PE in primary schools has attracted a lot of attention in recent times, with demands for increased physical activity coming from the National Task Force on Obesity and the establishment of support groups such as Physical Education Action Group (PEAG) and the Irish Primary PE Association among others. This report brings together some reflective and challenging thoughts on PE policy in Ireland. It includes the voices of some key players in the sphere of policy-making together with those of practitioners.

The Consultative Conference on Education in November 2007 provided an opportunity to us to commence a discussion within the Organisation of the issue of school governance and the complex matters pertaining to school governance and patronage. The patronage system, which has its origins in the historical evolution of the primary school system, is facing new challenges, which practioners must engage.

I would like to thank the Education Committee for preparing the background reports presented here and for their work in organising the highly successful consultative conference on education. They are supported by the Education Section team in Head Office, led ably by Deirbhile Nic Craith, Senior Official. I would also like to thank our publications team who prepared the CD. Our guest speakers at the conference deserve our special thanks for sharing their expertise with us on approaches to teaching and PE. In particular, I wish to thank our keynote speakers, Paul Conway, UCC, Mary O'Sullivan, UL and Niall Moyna, DCU. Finally, I would like to congratulate Aoife Walsh and Ellen O'Grady, pupils in 4th class in Mary Immaculate GNS, Collooney, for their courage in addressing a conference attended by over 300 teachers. They made us proud as primary teachers.

I hope that this report will contribute to the growing research on aspects of primary education in Ireland. The INTO will continue to ensure that the voice of teachers remains central in policy-making in education through our involvement in the preparation of reports and the organisation of consultative conferences for our members.

John Carr, MA (Ed)
General Secretary

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Part One

Approaches to Teaching and Learning

1

Background Document

INTRODUCTION

The Primary School Curriculum is designed to nurture the child in all dimensions of his or her life – spiritual, moral, cognitive, emotional, imaginative, aesthetic, social and physical (DES 1999, *Primary School Curriculum, Introduction* p.6). The curriculum's vision of education is expressed in the form of three general aims:

1. to enable the child to live as a child and to realise his or her potential as a unique individual;
2. to enable the child to develop as a social being through living and co-operating with others and so contribute to the good of society;
3. to prepare the child for further education and lifelong learning.

Learning for the child takes place in many ways and the curriculum accords equal importance to what a child learns and the process by which he or she learns it. The curriculum recognises that the child should be an active agent in his or her own learning and that the child's existing knowledge and environmental experience should be the starting point for new knowledge. The school ethos, which includes the teacher and his or her relationship with the child, is viewed as being of paramount importance in the learning process and "it is the quality of teaching more than anything else that determines the success of the child's learning and development in school" (DES 1999, *Primary School Curriculum, Introduction* p.20). When children are accorded a positive school experience which includes development of their literacy, numeracy and communication skills, this in turn enhances their self-esteem and confidence and their motivation to learn is increased.

The pedagogic principles of the Revised Curriculum which characterise the above learning processes are as follows:

- the child's sense of wonder and natural curiosity is a primary motivating factor in learning;
- the child is an active agent in his or her learning;
- learning is developmental in nature;

- the child's existing knowledge and experience form the base for learning;
- the child's immediate environment provides the context for learning;
- learning should involve guided activity and discovery methods;
- language is central in the learning process;
- the child should perceive the aesthetic dimension in learning;
- social and emotional dimensions are important factors in learning;
- learning is most effective when it is integrated;
- skills that facilitate the transfer of learning should be fostered;
- higher-order thinking and problem-solving skills should be fostered;
- collaborative learning should feature in the learning process;
- the range of individual difference should be taken into account in the learning process;
- assessment is an integral part of teaching and learning.

The Revised Curriculum is also clear that approaches to teaching can and must be varied to complement learning and take into account the differences in children, their interests and motivation, their varied personalities and the many ways in which they learn. It is stated in the curriculum that the teacher needs to adopt innovative approaches to teaching and to be aware of changes and developments in educational theory and practice.

Given the acknowledged importance of the way teachers approach their classroom teaching, and in the context of an expanded, child-centred, integrated curriculum to be delivered in increasingly diverse classrooms, the Education Committee of the INTO felt that it was timely to look at some of the current thinking in relation to approaches to teaching.

This background document looks firstly at some of the reasons that so many different approaches to teaching exist, with a focus on the theory of multiple intelligences. The document then outlines the central methodologies proposed in the Revised Curriculum. Two particular approaches to teaching are described in more detail as they are areas which provide particular challenges to teachers – **Play as an approach to teaching** and **ICT as an approach to teaching.** Co-operative teaching is also considered as some form of co-operative teaching is becoming more prevalent with an increasing number of learning support and resource teachers working with class teachers in classrooms.

The final section presents the findings of a number of focus group discussions, facilitated by a number of members of the INTO Education Committee on the theme of teaching methodologies. Holding focus group discussions was seen by the Committee as the most immediate and effective way of gaining an insight into the type of teaching approaches favoured by practising teachers, the factors influencing their choice of teaching approaches, and the barriers to adapting current practice. In total, six focus

groups were held with a total of 49 teachers participating. The sessions were recorded and transcribed, with all identifying material omitted.

2

Approaches to Teaching and Learning in the Revised Curriculum

INTRODUCTION

Teachers decide on an approach to their teaching depending on the context in which they are teaching, which includes the nature of the pupils and the circumstance pertaining at a particular time, such as time of day, or the season, aims of the lesson or previous experience of the class. Particular contexts may also demand particular pedagogic approaches.

The teacher

Teaching styles can include leading and demonstrating from the front of the class, or adopting a more pupil-centred approach where the teacher shapes the framework within which the pupils work and then encourages them to make their decisions under guidance. Whether a teacher considers her/himself as part of the group where whole-group decision making is encouraged; prefers to be fully in charge and tell pupils what to do; or 'goes with the flow' letting each lesson evolve in its own way, is all part of teaching style.

In addition, the teacher's mood and energy levels can be factors that may alter significantly the suitability and efficiency of any particular style. Effective teachers are enthusiastic, flexible and well-organised. They teach children how to learn, have clarity of purpose and of explanation and good subject knowledge. They also have high expectations and a sense of fun and humour. A good work life balance will help maintain energy levels, and will assist the teacher in remaining focused, maintaining a sense of humour and retaining high expectations.

The pupils

Teaching and learning styles can be influenced by pupils' age; their perspectives both as individuals and as a group; gender and ethnic balance; the make up of the group – ie, whether they are streamed or of mixed ability. Research indicates that mixed ability teaching tends to be more effective for middle and lower ability pupils (Devine 2000, Lynch 1989). The challenge is to ensure sufficient differentiation, particularly for more able pupils. It is argued that streaming can sometimes be more effective for the most able. However, there may be a tendency to abandon a variety of teaching and learning styles with high-ability groups. There may also be insufficient differentiation within groups and a lack of movement between groups, thus labelling many pupils as less able.

A direct approach to teaching aims to acquire new knowledge and skills through a structured sequence, often beginning with modelling, demonstration or illustration by the teacher. Lessons typically proceed to individual or group work and often end with whole class review. An inductive approach aims to develop a concept or process through a structured set of directed steps, where pupils collect and sift information, then examine data and construct categories and generate and test hypotheses. An exploratory approach to teaching and learning aims to practise and refine understanding and skills, through pupils testing predictions or hypotheses and deciding what information to collect, and then collecting and analysing it.

The extent to which pupils retain what they learn depends on the approach taken to their learning. The percentage of learning retained through various approaches is as follows:

LEARNING THEORY: RETENTION[1]

5% lecture.
10% reading.
15% visual arts.
30% demonstrations.
50% small group work.
75% experimental work.
90% peer tutoring.

It is clear that the more collaborative methods of teaching are the most effective. Pupils also need to develop personal and group skills so that they may cope with the social context for learning, and in order to retain knowledge most effectively. Vygotsky's "zone of proximal development" underpins many approaches to teaching and learning in the primary school curriculum – those tasks too difficult for the child

1 NTL Institute. *"Retention Rates from Different Ways of Learning"* (2000). http://www.cofc.edu/bellsandwhistles/research/retentionmodel.html

to solve alone can be accomplished with the help of adults/peers, through instruction, discussion and encouragement while the child internalises the 'how to do' bit of the task as part of his/her inner speech for future reference. Hannan (1996), an independent expert in how boys and girls learn, develops this idea further, and recommends a "third/third/third" approach to proximal development, with pupils spending a third of proximal learning time in friendship pairings/groupings, a third in single gender non-friendship pairings and a third in mixed gender pairings, so that within one half term everyone works with everyone else.

There are many individual learning styles, with most individuals being dominant in one particular style. These styles are often referred to as follows:

- Visual/Spatial.
- Auditory.
- Kinaesthetic.

Visual learners prefer to see information, auditory learners like to hear information and kinaesthetic learners learn best when physically involved (touching, doing, feeling) with their learning. Kinaesthetic learners are likely to benefit the most from active learning although others, particularly auditory learners will benefit too. Special needs students, such as those with dyslexia also gain a lot from active learning. Learning styles influence how both teachers and pupils approach the curriculum in schools.

Multiple Intelligences (MI)

Traditionally schools have emphasised the development of logical intelligence and linguistic intelligence. Multiple Intelligences is a psychological and educational theory developed by psychologist Howard Gardner which suggests that an array of different kinds of intelligence exists in human beings. Gardner suggests that each individual manifests varying levels of these different intelligences and thus each person has a unique 'cognitive profile'.

Gardner's theory argues that students are better served by a broader vision of education where teachers use different methodologies, approaches and activities to cater for all students, not just those who excel at linguistic and logical intelligence. The revised primary curriculum emphasises the value of directed discovery learning and an experiential approach, which are in line with MI approach.

The theory was first published in 1983 in Gardner's work *Frames of Mind: The theory of Multiple Intelligences.* In this work he defined the first seven intelligences. He added the last two in *Intelligence Reframed* (1999). The nine intelligences identified by Gardner are as follows:

Linguistic Intelligence enables individuals to communicate and make sense of the world through language. People with heightened linguistic intelligence use words to

understand and interpret the world around them, and use words easily to communicate. They can articulate concepts that others may understand but may not have the ability to put into words. Poets, journalists writers and orators have a heightened linguist intelligence.

Logical-Mathematical Intelligence enables individuals to understand abstract relations. These are concepts that do not exist in the real world but have to be imagined and documented by the brain. Scientists, mathematicians and philosophers all rely on this intelligence. People with this ability are good at solving practical problems because they can imagine different solutions and test them in their brain or on paper without having to find concrete examples in real life. Mathematics is the best example.

Spatial Intelligence makes it possible for people to perceive visual or spatial information, to transform this information, and to recreate visual images from memory. Many people find it easier to express themselves in images rather than in words. Well developed spatial capacities are needed for the work of architects, sculptors, engineers, film-makers and designers.

Bodily/Kinesthetic Intelligence allows people to use all or part of the body to create products, solve problems or express themselves. Athletes, surgeons, dancers, choreographers and crafts people all use bodily/kinesthetic intelligence.

Musical Intelligence allows people to create, communicate and understand meanings made out of sound. From an early age they may lock on to melodies and rhythms much quicker than words, numbers or images. Singers, musicians and composers all use this intelligence.

Inter-personal Intelligence enables individuals to recognise and make distinctions about feelings and intentions of others. According to Gardner inter-personal intelligence is seen in how one notices distinction among others, in particular, contrasts in their moods, temperaments, motivations and intentions. Teachers, parents, politicians, psychologists and salespeople rely on inter-personal intelligence.

Intra-personal Intelligence helps individuals to distinguish among their own feelings, to build accurate mental models of themselves and to draw on these models to make decisions about their lives. This kind of intelligence is seen in people who use their experiences (positive and negative) to good effect, and who understand and employ their own talents effectively.

Naturalist Intelligence allows people to distinguish among, classify, be sensitive to and use features of the environment. Naturalist intelligence may be available to us in the way we interact with our surroundings and the role they play in our daily lives. Farmers, gardeners, botanists, geologists, florists and archaeologists all exhibit this intelligence.

Existential Intelligence is the capacity to raise and reflect on philosophical questions about life death and ultimate realities.

Other intelligences have been suggested or explored by Gardner and his colleagues.

These include spiritual and moral intelligence. According to Gardner there are problems around the 'content' of spiritual intelligence and its privileged but unsubstantiated claims with regard to truth value. He concludes that it is best to put aside the term spiritual intelligence due to its failure to meet a number of his criteria. Moral capacities were excluded because they are normative rather than descriptive.

The theory has its detractors in the psychology and educational theory communities. The most common criticisms argue that Gardner's theory is based on his own intuition rather than empirical data and that the intelligences are just other names for talents or personality types. Despite these criticisms the theory has met with a strongly positive response from many educators. It has been embraced by many educational theorists and been applied to the problems of schooling. A number of schools in North America have structured curricula according to the intelligences and many individual teachers incorporate some or all of his theory into their methodology.

3

Methodologies in the Primary School Curriculum

There are **six central methodologies** proposed in the revised curriculum. These are summarised as follows:

1. Talk and discussion

This is a central learning strategy in every curriculum area. Much learning takes place through the interaction of language and experience. Ideas, emotions and reactions can be explored through increasingly complex language which helps the child to clarify and interpret experience and acquire new concepts.

2. Active learning

The child should be an active agent in his or her own learning. The curriculum is designed to provide opportunities for active engagement in a wide range of learning experiences. Children are encouraged to respond in a variety of ways to particular content and teaching strategies. The teacher needs to identify particular stages of development and to choose a sequence of activities that will be most effective in advancing the child's learning. This is the principle of guided activity and discovery learning.

3. Collaborative learning

Children are stimulated by hearing the ideas and opinions of others and by reacting to them. Collaborative work exposes children to the perceptions that others may have of a problem or a situation. This interaction will help broaden and deepen individual children's understanding. The act of co-operating with others facilitates the child's social and personal development and fosters an appreciation of the benefits of working co-operatively. The prerequisite and foundation of most instructional innovations are

co-operative learning. These innovations include:

- A thematic integrated curriculum.
- Whole language teaching.
- Critical thinking.
- Active reading.
- Process writing.
- Materials based (problem solving) maths.
- Learning communities.
- Authentic, performance-based, assessment.

4. Problem solving

Higher order thinking skills, such as summarising, analysing and making inferences and deductions, are developed through problem solving. Tasks such as observation, collating and evaluating evidence and identifying essential information help children to make informed judgements. Discovery learning most notably takes place in problem solving situations where the learner draws on his/her own experience and prior knowledge to discover the truths that are to be learned.

5. Skills through content

The ability to transfer learning is a central feature of the curriculum. Each curricular area addresses the development of abilities and skills, which the child will be able to apply in dealing with problems that are unfamiliar. The child's ability to apply what s/he has learned to a variety of situations is a good indicator of the effectiveness of that learning.

6. Using the environment

First-hand experience that actively engages the child with the immediate environment and with those who live in it is the most effective basis for learning. The experience begins in the home and continues to expand, as the child grows, from the immediate environment to the school and beyond. First hand experience of different aspects of the curriculum outside the classroom adds to the relevance and effectiveness of children's learning.

Some areas of the curriculum, such as English, lend themselves to many or all of the above methods. Others, such as PE are more limited in the range of approaches used. It is interesting that **directed teaching** is only mentioned in the PE and Science subjects. **Guided discovery** is suggested in the following areas, PE, Science, Geography, Music and Visual Arts. The curriculum identifies **'linkage'** as the use of

integration within a particular subject area, for example, when teaching 'living things', integrating it with the strand on 'environmental awareness'.

7. Integration, on the other hand refers to cross curricular connections. For the young child, the distinctions between subjects are not relevant. What is important is a coherent learning process that makes connections between the different subjects. An emphasis on the interconnectedness of knowledge gives children a broader and richer perspective and reinforces the learning process.

8. Differentiation, is the term used to describe the strategies teachers use to enable those with diverse learning characteristics to participate in the mainstream programme. The curriculum allows for differences in the capacity and range of individual intelligences. Differentiation is also described as adapting teaching to improve access to learning for pupils of differing abilities. The various forms of differentiation available to teachers include the following;

Differentiating learning objectives

- Differentiation of pace.
- Differentiation by teaching style.
- Differentiation by support: giving more help (perhaps via an SNA) to certain pupils within the group.
- Differentiation by resource.
- Differentiation by task: setting different tasks for pupils of different ability.
- Differentiation by outcome: setting open-ended tasks, allowing pupil response at different levels.
- Differentiation by grouping.

Teachers can also differentiate by content or context, and in their questioning techniques, by the amount of homework given or by the nature of support given. Effective differentiation involves being sensitive to the individual characteristics of each child, and aims to make a child feel special, valued or cared for rather than 'different' or less able.

Active learning

There has been no exact definition of active learning. It has been broadly defined as being part of a broader trend towards the use of a wide range of training and learning styles in the classroom. Chickering and Gamson (1987) suggest that students must do more than just listen. They must read, write, discuss or be engaged in solving prob-

lems. It is important that pupils are actively involved and engaging in such higher order thinking tasks as analysis, synthesis and evaluation. Within this context, it is proposed that strategies promoting active learning be defined as instructional activities involving students in doing things and thinking about what they are doing. Strategies to promote active learning in the classroom, include the following:

- Discussion in class.
- Visual based instruction.
- Written exercises.
- Co-operative learning.
- Debates.
- Drama.
- Role playing and simulation.
- Peer teaching.

Active learning has many advantages as outlined below:

- It is boy (and girl) friendly.
- It aids motivation.
- It allows pupils to take control and make decisions.
- It supports the full range of intelligences and learning styles.
- It supports proximal learning.
- It develops thinking skills and creativity.
- It simulates real life.
- It differentiates by allowing pupils to access knowledge at a variety of levels.
- The skills developed allow pupils to respond flexibly to a wide range of situation.

However, there are many challenges for teachers in promoting active learning in their classrooms. Teachers may fear the noise levels and may feel a lack of direct control. Teachers may also fear an increase in off-task behaviour, though the opposite is more likely to be true. They may feel a lack of direct control and involve a lot more preparation time in the beginning. It is hard to legislate for and short-term outcomes are less predictable and therefore it is less easy to set targets and tests. Teachers may be brought beyond their own subject expertise. It implies a new, more equal relationship between teacher and learner, which can make some teachers feel uncomfortable. In addition class time is limited, large class numbers can be difficult to manage and there is often a lack of resources.

Higher-order thinking and problem-solving

Activities which foster higher order thinking include activities such as visualisation, empathising, role adoption, exercises in sequencing and logic, social interaction and

activities involving adapting to changing circumstances. In addition, the capacity for problem solving and expressing an informed opinion, elements of the above, are nurtured in an environment where making a false hypothesis is equally as valued as finding a solution, where interest in the process is as great as that given to the conclusion and where voices are listened to actively and with respect. Put simply, solutions to complex problems are generally not found in one attempt; in the process the learner must be aware that it is always okay to be wrong. Each incorrect assumption once discounted can be viewed as a step towards the solution. Of course all higher-order thinking and problem-solving rely on access to relevant, current and accurate information. So the first challenge for the teacher or the school organisation is to provide access to information in a form that is appropriate to the level of cognitive ability and development of the learner.

The definition from the 1999 curriculum refers mainly to critical and analytical thinking. However Michael Pohl (2000) refers to three distinct types of thinking: Critical and Analytical thinking, Creative thinking and Caring thinking. The work of Edward de Bono on ways of thinking and his six thinking hats should also be considered. It may be as much a mistake to assume that cognition is mainly about the learning of facts and reproducing them at will as it would be to limit higher order thinking to the analysis and evaluation of information for the purposes of finding solutions. That could lead one to neglect important aspects of higher order thinking such as the capacity to be creative and the capacity to respond emotively. The ability of the learner to reflect on owned feelings and those of others and express them also belongs in the realm of higher order thinking. The learner's capacity to reflect on how he/she learns, referred to as meta-cognition, belongs here also. Meta-cognition concerns knowledge of ones own mental processes, according to Riding and Rayner (1998). Higher order thinking is also required to engage with that dynamic generated through the sharing of knowledge; the process that can bring about new learning through interaction with and between learners.

Peer tutoring

Peer tutoring involves pupils working in pairs in the roles of tutor and tutee. It is a method of engaging in one-to-one instruction and is effective from both an academic and social point of view. Both tutor and tutee benefit from peer tutoring, it is an efficient use of teacher time and provides active learning opportunities, something highly endorsed in the Primary Curriculum. It is an underlying principle of the curriculum that the child should be an active agent in his or her own learning *(Primary School Curriculum 1999, Introduction* p.14).

Deciding how to pair pupils can be based on:

- Same ability peers – pupils can swap the role of tutor/tutee in the same session.
- Mixed ability peers (this type of pairing was used in PALS – Peer Assisted Learning Strategies a form of class-wide peer tutoring which won a best practice award in the US in 2000).
- Pupils with learning difficulties as tutors – this only works when the tutee is from a class at least one year below the tutor, but can result in improved academic gains and improved self-esteem.

BENEFITS

Research shows evidence of a causal path between teacher instruction, pupil engagement and academic achievement. Pupils who are actively engaged in their own learning produce greater academic achievement. With peer tutoring, pupils get immediate feedback from their peers and immediate feedback provides greater motivation for pupils. Pupils also benefit from the verbal interactions with each other.

In addition to tutor and tutee benefits, there are whole class benefits which include:

- A reduction in misbehaviour in class.
- An increase in all pupils' self-confidence.
- All pupils' social skills are developed and enhanced.
- The class bonds together better and tend to become a more cohesive group.
- Pupils enjoy the programme.

Concluding comment

With the growing influence of theories on left and right brain learning, multiple intelligences, emotional intelligence and preferred learning styles it is increasingly evident that a variety of teaching and learning approaches need to be included in the teaching learning process in schools. Teachers may not consciously differentiate for every individual in every lesson, but include a variety of teaching styles over a series of lessons, in order to cater for the differences in learning styles and abilities among their pupils. A variety of approaches also has the advantage of challenging pupils to think in new ways. It can happen that a pupil's preferred learning styles may not be their most effective learning style. Teachers with an active, responsive and inclusive style of teaching are best equipped to motivate the mix of personality, intelligence types and learning styles that are found in all classrooms and to develop independent learners able to think and act flexibly and creatively.

4

Play as an Approach to Teaching and Learning in Primary Education in Ireland

Avoid compulsion and let early education be a manner of amusement. Young children learn by games; compulsory education cannot remain in the soul.

(Plato; a long time ago)

The right of the child to rest and leisure, to engage in **play and recreational activities** is enshrined in the *United Nations Convention on the Rights of the Child* (1989). Play is a central activity of childhood. It provides children with activity and enjoyment. Through play children explore their natural and social environment. During play children can investigate this environment, make meaningful discoveries about it and solve problems arising from the materials they encounter or conditions in which they themselves. They can examine the dynamics involved in maintaining social relationships through co-operation, conflict resolution and discussion. In play children approximate the adult world and experience adult roles in a structure that is imaginative, flexible and safe. Play stimulates the imagination expands the child's understanding of the world they live in. Creativity and imagination are essential to a child's play and transport the child from their own existence to experience vast alternative universes limited only by the child's own capacity to invent.

The potential for play as the primary approach to teaching and learning for the early years is widely accepted. 'The informality of the learning experience inherent in the curriculum for infant classes, and the emphasis it gives to the element of play, are particularly suited to the learning needs of young children.' *(Curaclam na Bunscoile, 1999. Réamhrá,* lth. 31*)* More recently the National Council for Curriculum and Assessment reiterated its view that play is the cornerstone of early childhood learning. Both the *Primary School Curriculum* and the draft *Framework for Early Learning* highlight

play as a natural way for children to learn (info@ncca Sept. 2007). The framework will provide information on using play as a vehicle for learning. During the consultation process on *The Framework for Early Learning* the importance of play was highlighted frequently as a powerful and valuable context for early childhood learning. Contributors strongly agreed that play has a crucial role in enabling the child to develop and learn physically, emotionally, intellectually and socially. Vygotsky (1978) stressed the importance of symbolism in play as a means through which imagination and understanding can be developed and regarded play as the leading source of development in early childhood. Supporting Vygotsky's theory, the CECDE stated that carers and teachers who appreciate the value of play in the learning process should actively collaborate with children to provide structure and scaffolding for their learning experiences (CECDE, 2004). Play is considered essential in the learning process, and as an "integral part of a curriculum and methodology to facilitate learning and development in the early years" (CEDCE, 2003). Play, however, is not confined to the early years and is seen as a valuable context for learning right through childhood.

Types of play that can be used in teaching for learning

Identifying discrete types of play is as difficult as defining concisely exactly what play is.

> *"Play cannot be easily defined or categorized because it is always context dependent, and the contexts are varied. There are many different forms of play including role play, imaginative play, socio-dramatic play, heuristic play, constructive play, fantasy play, free flow play, structured play, rough and tumble play, all of which involve a wide range of activities and behaviours and result in varied learning and developmental outcomes."*
>
> *(Wood, 2005)*

Specific play activities may be described by more than one of the nominators above. It is possible to look at themes across play activity. For the child play is primarily a fun activity engaged in by choice. In the context of learning the teacher will contain choice by persuasion or by limiting the range of possible play activities. The teacher can manipulate the learning environment and provide for a range of play opportunities that may be of interest to the child. These will be planned for their potential to provide developmental and learning experiences. The teacher plans for learning, guides and supports the learner but does not control the outcomes. The child is an active learner engaging in activity with the potential for learning. Learning is likely to occur but not inevitable. Sometimes what is learned is not what was intended but nonetheless valu-

able. Listed below are some themes across play, which are useful in discussing play in the context of learning.

- IMAGINATIVE PLAY
  Imaginative play includes role-play and any form of play where the children pretend they are someone else or somewhere else. It taps into the child's capacity for fantasy and builds on his/her experience of story.

- MANIPULATIVE/CONSTRUCTIVE PLAY
  This is play with natural and man-made (toys and equipment) materials. It is physical play in which the fine and gross motor skills are important. Playing with sand, water and Lego are examples of this type of play. Small world play belongs here too because it involves recreating the world the child knows in miniature form though the manipulation of real world objects in miniature. It is also imaginative, as the child has to suspend disbelief and pretend.

- CREATIVE PLAY
  Creative play refers to play where there is an end product that was not there when play commenced.

- LANGUAGE GAMES/MEMORY GAMES
  Language games draw on the child's memory for rhymes and the child's capacity to use, understand or manipulate language.

- CO-OPERATIVE/COMPETITIVE PLAY
  This category highlights the difference between play as collaboration aiming towards a shared objective and games in which there are winners and losers. It also includes the social aspect of play as a shared exercise involving interactions with other children and adults.

- FREE FLOW PLAY/STRUCTURED PLAY
  Here the distinction is around control. If the play is not directed and the teacher watches for opportunities for learning, then the balance of control is with the child. On the other hand if the teacher instructs, has planned for specific learning outcomes and has created a learning environment which channels play activity, the teacher controls play. Free play may provide opportunities for learning and certainly preserves the autonomy of the child but learning is not inevitable. When play takes place within a planned structure, learning outcomes are more predictable. Piaget's cognitive play theory proposes minimal intervention by the teacher while in contrast Vygotsky's social-cultural theory of development

suggests that adults need to role in stimulating learning in the context of play.

- ROUGH AND TUMBLE PHYSICAL PLAY
  Close encounter play is important for gross motor co-ordination and muscle development in early childhood. It is manipulative play but distinct in that often there is no equipment involved. It is the child using it's own body, rolling, tumbling, pushing, pulling, climbing and wrestling. In free play the child moves through the environment without direction. When structured it is a feature of the PE curriculum.

Play/games and motivation

Play can provide a key motivational strategy to engage the children's interest in any area of the curriculum. The teacher who starts a lesson with "Now we are going to play a game," will invariably have a captive audience. Play here helps to grab and maintain the child's attention giving a greater chance for learning to happen. The game may also introduce, practise or develop the skill or element of knowledge which is the objective of the lesson but this is in addition to the motivational factor.

Games reinforce learning through opportunities for repetition/ICT

Teachers have a wide repertoire of language and number based games to use to reinforce learning through repeated practice. *O'Grady says* and *King of the castle* are two among many. Computer games on *XBox*, *PlayStation* or PC are play activities for most children in Ireland in 2007. Advances in technology have provided many additional opportunities for play based learning activities in our classrooms. Resource providers in educational have long since tapped into a market for computer based learning products. Some of these products are web based or supported on line. The number and scope of web based resources for learning grow exponentially year-by-year. Many of those most widely used in classrooms include elements of play so that they are attractive to children. They provide opportunities for success and reward and monitor progress. The element of choice involved in play is also evident in many pieces of software for learning as they often provide a menu of activities for the child to engage in. There are built in opportunities for repetition to consolidate learning acquired at the computer or through other learning contexts.

Play in the revised primary school curriculum

Play is seen as central to pre-school and infant education but is not exclusive to the education for the early years. It has a place at all levels of learning and teaching espe-

cially where employing a multiplicity of strategies in curriculum delivery is valued.

In all the subject areas of the *Primary School Curriculum* (1999) where material resources or equipment are used, teachers will allow children time to examine this equipment, to manipulate it and to play with it as an introduction to new concepts and how the equipment might be used. This is particularly useful in Mathematics and Science but can also be applied to most other subjects in the curriculum. The History curriculum strongly recommends the use of artefacts for investigation, construction with familiar objects is central to the Visual Arts curriculum, the Physical Education curriculum involves using a lot of equipment too and small world play can be particularly useful in environmental studies, to give a few examples. In fact, for each of the subject areas a recommended list of essential materials has been compiled and included in the revised curriculum or presented at inservice days during the roll-out of the revised curriculum. For example, according the PCSP co-operative games link elements of the PE and SPHE curriculum very easily (*InTouch,* Sept. 2007).

The INTO's Curriculum Survey (INTO, 2006), which sought teachers' views on the implementation of *Primary School Curriculum* (1999), indicates that teachers at primary level include play based learning activities as an important part of their teaching repertoire. Specific questions relating to play were asked about Mathematics, Science, Visual Arts, Language and Physical Education. In mathematics activity based programmes such as *Shared Maths* and *Maths for Fun* were used by 17% and 15% of respondents, respectively. In the teaching of visual arts only 20% of respondents reported that they rarely used construction activities. This suggests that play activities are integrated into the teaching of visual arts on a fairly regular basis by around 80% of teachers. In the questions on the teaching of Irish 60% of teachers reported that they used language games *often* and 34% used language games *sometimes.* In English, the use of language games was equally as prevalent, in that 91% of respondents said that they used language games either *often* or *sometimes.* In the questions on physical education, 90% of teachers responded that they used games *often* and 10% said that they *sometimes* used games. In Science, 29% of teachers *often* allowed time for free exploration of materials, and 51% said that they *sometimes* allowed for this time for free play. In each of the curricular areas in which play-related questions were put no less than 80% of teachers responded that they *often* or *sometimes* used play-based learning activities in their teaching. This is evidence that play is a much used and valued strategy in primary education in the Republic of Ireland.

Playing with natural or man-made materials is only one aspect of play. Imaginative play is another; role-play is suggested as a strategy in many subject areas. Creative play can follow on from free play when the children express their ideas and feelings imaginatively in new constructions, sounds, movements or series of movements. Some commentators see play as essential to the creative process. Carl Jung puts it: "The creation of something new is not accomplished by the intellect but by the play instinct

acting from inner necessity. The creative mind plays with the objects it loves." Stephen Nachmanovitch seems to agree when he says, "Creative work is play. It is free speculation using materials of one's chosen form." Bill Gates echoed those previous comments when he said that the child's "impulse to make a toy do more is at the heart of innovative childhood play. It is also the essence of creativity." It seems that to discourage play will have a limiting effect on progress and creativity, reducing our world's capacity to imagine and achieve what could be wondrous and possible. Play is vital. Those who wish call a child away from play to do work instead may be in great error when they believe that the work will be more productive.

Concluding comment

It is clear a quality play-based education for early years learning is desirable and advocated by all stakeholders mentioned here. *A Curriculum Framework for Early Childhood Education* will soon be published by the NCCA and will include a background paper on *Play as a context for early learning and development*. The revised *Primary School Curriculum* (1999) encourages the use of play as a valuable context in which learning can take place. NCCA continues to highlight the potential of play in the teaching and learning process and in promoting the holistic development of the child. Teachers incorporate play-based learning into his/her teaching in every area of the curriculum. Perhaps the best a teacher can do is facilitate meaningful play situations for the children in their care and the greatest resource is a miscellaneous collection of old clothes and objects in a cardboard box in the corner of the classroom.

5

ICT as a Tool for Teaching

In the debate which took place about the future of Irish primary education which informed the *Education Act* (1998) and the writing of the *Primary School Curriculum* (1999) the role of information and communications technology was identified as a key issue. As stated in the introduction to the *Primary School Curriculum* (1999);

Technological skills are increasingly important for the advancement in education, work and leisure. The curriculum integrates information and communication technologies into the teaching and learning process and provides children with opportunities to use modern technology to enhance their learning in all subjects.

The first sentence of this statement published in 1999 is as true today as then. ICT is becoming ever more an integral part of living in a modern world. The second sentence was aspirational then and remains so today. Perhaps it was intended to be inspirational and provide a vision of what the role of ICT in primary education could be. Today, while the vast majority of primary teachers along with most of the rest of the Irish workforce have embraced technology and use it in their work, full integration into the teaching and learning process and in all subjects still must remain elusive. Technology changes rapidly and while government has provided funding to network all primary schools and connect each classroom via broadband to the internet, the same commitment to providing hardware, software, technical support and continuous professional development has not been forthcoming. One teacher in the focus group discussions[2] commented, "It is akin to building a six-lane super motorway system around the country to be used by bicycle." Many schools lack the financial resources to purchase and update hardware. They are forced to maintain obsolete hardware with little or no technical support. Schools struggle to find money to buy educational software, and rely on schemes such as the *Computer in Schools Programme* run by a commercial company to add to their collection of ICT resources.

However, innovation is not absent from Irish schools, and there are many examples of innovative pilot projects. One such pilot project is a project jointly resourced by NCCA and NCTE on the use of mobile phones and text-based web chat in the teach-

2 See final section

ing and learning of Irish (see info@ncca.ie). *Teaching and Learning for the 21st Century,* a school-university initiative (2003-2007) based at NUI Maynooth, has as one of its five strands 'the innovative use of ICT to enrich learning'. The long-awaited *ICT Framework, a structured approach to ICT in Curriculum and Assessment,* is about to be published by the NCCA. Individual schools win awards for excellence in website design. Leárgas, through Comenius, supports web-based projects involving collaboration between Irish schools and other schools around Europe. Many Irish schools have set up links with schools in the less developed world and maintain these through online communications. Schools, universities and government funded policy and support bodies point the way forward.

Regrettably, the pragmatism of politics and politicians and budgetary constraints mean especially at primary level, that what is delivered is more about semblance than significance, is more about short term cost than lasting value for money and more about what can be delivered in a short time frame, namely in the period before the next election, than an investment in the future of our nation and its young people. The publicity around the establishment of the 'Digital Hub' within the historic Liberties area of Dublin masked the fact that this is really a project focused on urban renewal. In 1997, Ennis became Ireland's 'Information Age Town' by winning a prestigious nationwide competition sponsored by Telecom Eireann. Government investment of IR£40 million along with another IR£15 million from Telecom Eireann was provided for infrastructure, hardware and training. Ten years later the title has lost its lustre. High-speed broadband connections are not easily available to the citizens of Ireland's 'Information Age Town'.

ICT in the primary school classroom

As outlined in the introduction to the *Primary School Curriculum,* the curriculum takes account of the extent to which information and communications technologies have made the accessibility, variety and exchange of knowledge a central element in work and leisure. The potential of such technology in enriching the child's learning experience is acknowledged in every area of the curriculum (*Primary School Curriculum, Introduction,* p. 74). The potential of Information and Communications Technology as a resource to enhance learning is huge. The connection to the world wide web brings the whole world of online information into the classroom. No corner or region of the world is so remote that it cannot be examined online, information in word or picture can be gathered and used by the children. The children can explore beyond this world too. They can investigate the solar system and the universe. The internet is not a time machine but it has the potential to bring the past to life by providing access to archive material on the websites of libraries, museums and historical/cultural organisations. Many websites such as www.askaboutireland.ie are child and school friendly and

differentiate the material so that it is more easily accessible and understood by children. The use of data projectors and interactive white boards can allow the teacher to lead the children in a voyage of discovery down the information super highway. A simple application of this technology, used in many schools, in the looking and responding strand of the visual arts curriculum is through accessing the works of the great masters online. The website of the PCSP (www.pcsp.ie) can be used by teachers who seek help in mediating each subject in the revised curriculum for the cohort of children in their care.

ICT creates opportunities for developing language skills through real communication of information between learners and educators and learners and other learners. Presentation of work is enhanced by use of graphic design. ICT facilitates the publication of material for local distribution and display. Word processing software packages assist children in process writing. ICT aids the teacher in providing a print-rich environment in the classroom and around the school. Digital photography and video clips can be used as alternatives to paper-based presentation of work. Both can also be used to record activities and learning for future reference. At primary level submitting work for assessment online or the downloading of lesson content and assignments from a schools website, as a podcast for example is probably impracticable for the moment. However, technology is advancing rapidly and what is now commonplace was only a few short years ago also seen as improbable.

Educational software on CD ROM and educational programmes online are increasingly available to teachers who want to give children alternative ways to practise skills particularly in language and mathematics. When children engage with educational websites or CD ROMs to learn or consolidate learning they are active in their own learning. The website of the Woodland Kent primary school is particularly useful for providing opportunities to practice computation, spelling and sentence building. *LEXIA* is a phonological awareness programme available on CD ROM. *Clicker* is an example of a piece of educational software to develop writing skills also on CD ROM but which has an online component. These are but three examples from the numerous resources available.

Interactive whiteboards are increasingly being used in schools. An interactive whiteboard is a large, touch-sensitive panel that connects to a digital projector and a computer, displaying the information on the computer screen. It resembles a traditional whiteboard and is used similarly. The computer connected to the interactive whiteboard can be controlled by touching the board directly or by using a special pen. Such actions (inputs) are transmitted to the computer instead of using a mouse or keyboard.

Interactive whiteboards present educational resources in a highly interactive way and are suitable for whole class and small group settings. They allow pupils to engage and interact with the technology to become active participants in learning. Pupils with

special needs can particularly benefit from the presentation of multimedia content on a large screen as it can aid in both information processing and retention. Optimal use of an interactive whiteboard involves both the teacher and students using it in a classroom situation. (NCTE)

Many schools provide for both a dedicated computer room and for computers in all classrooms from limited resources. The decision to be made by schools is where to invest the bulk of the financial resources they allocate to ICT and on what sound pedagogical evidence they base that decision.

The use of ICT in special needs education in mainstream primary schools

ICT is a powerful teaching and learning tool. It challenges all pupils and facilitates a differentiated pace and level of learning that takes account of individual pupil abilities. Computers have enormous potential to reduce or eliminate some of the learning difficulties associated with disability (INTO, 2000). ICT particularly enhances the learning of pupils with special educational needs by providing them with the opportunity to work at their own pace and facilitates a very high standard of presentation and accuracy of work done in creative or functional writing and projects. Interactive white boards cater more effectively for visually impaired students and other students with special needs than other means of presentation. They also facilitate over learning for pupils with general learning difficulties because each chart generated for teaching can be saved for frequent and easy retrieval. ICT in this way can also assist the integration of children with special educational needs in mainstream classrooms.

Many educational computer programs are highly motivational for children with special educational needs. Many teachers working in special education report that working with such programs motivates their pupils to greater effort and can provide them, in a non-threatening way, with the extra practice they require in order to master basic skills (INTO, 2000). The computer's motivational appeal has been attributed to the fact that pupils find it non-judgmental and non-threatening (DES, 1997). The computer has endless patience and is emotionally neutral which, for poor readers, can be a major attraction. The use of sophisticated graphics, characteristics of computer games and being active in their own learning also contributes to learner motivation. The child can have the computer read the whole or part of any text on the computer screen. Programmes for translating speech to text are becoming increasingly more efficient. The computer can read aloud what the child has written as part of process writing and editing making the child a more independent learner, not needing to rely on the teacher to correct his/her work. The increase in motivation is often accompanied by an increase in self-esteem, in turn enhancing pupil learning.

INTO Primary School Curriculum Survey 2005

The INTO Curriculum Survey, carried out in 2005 (INTO, 2006), highlights some issues pertaining to the use of ICTs in teaching and learning in primary schools and reveal some interesting facts. The results of the 2005 INTO Curriculum Survey would suggest that ICT is not widely used across all subjects in the delivery of the revised curriculum in primary schools in Ireland. ICT was used *frequently* by only 20% of respondents in their teaching of mathematics. The use of technology was also viewed as the least successful tool in the teaching of the Mathematics curriculum. In the Visual Arts only 22% of teachers claimed to have access in school to art galleries online or collections of masterpieces on CD ROM. There were only five references to the use of ICT, ie, digital cameras and multi media as a resource for the Visual Arts. Only 9% of teachers reported that they *frequently* used ICT in their teaching of Science. Less than half of teachers who responded (44%) indicated that their schools had a dedicated computer room. ICT was used most often, at 84%, in supporting the learning of pupils with special educational needs though 78% of teachers responded that they use ICT to support student learning in the classroom. Over half (58%) of the respondents used ICT as a resource in curriculum delivery in their classrooms.

The apparent contradiction here between the low incidence of ICT use in subject areas (20% or less) and the relatively high proportion of teachers (78%) responding that they use ICT to support student learning in the classroom may be explained by proposing that ICT is used less as a teaching tool and more to consolidate learning. It seems to be a fair assumption as there are very few if any primary schools where each pupil has access to a personal computer throughout their school day. Except when the class has access to the computer room, the teacher must generally set up a *rota* for individual pupils or pairs of pupils to use the computer(s), if any, in their classrooms. The low frequency of ICT use in subject delivery is due in part to insufficient numbers of computers available to primary teachers or their unreliability. The use of ICT is also only one of many strategies used by teachers. It is not a source of surprise or disappointment to note that this strategy is less favoured than others such as *'talk and discussion', 'guided discovery learning'* or *'the use of child's immediate environment'*. It is unlikely that the use of ICT in teaching will usurp all other classroom practices to become the primary or most favoured way to deliver the revised curriculum. The curriculum recommends a multiplicity of approaches to teaching. The use of ICT is one of many tactics available to teachers. It cannot replace them. Nevertheless, there is scope for further development in the use of ICT as a teaching and learning tool.

Supporting ICT in primary schools

The National Council for Curriculum and Assessment (NCCA) has overall responsibility for curriculum development in the Republic of Ireland, and has drafted an *ICT*

Framework – A Structured Approach to ICT in Curriculum and Assessment. This will shortly be available on its website (www.ncca.ie). An online resource for schools to support the use of ICT in schools is also being developed.

The National Centre for Technology in Education (NCTE) was established under the auspices of the Department of Education and Science (DES) in 1998. As the Government's agency on the use of information and communications technology (ICT) in education it plays a central role in helping to maximise the benefits for learners and teachers in using ICT. (http://www.ncte.ie 2007). Scoilnet is the official education portal of the Department of Education and Science in Ireland, originally launched in 1998, and managed by the NCTE. Scoilnet's current interface was launched in March 2003. Scoilnet actively promotes the integration of ICT in teaching and learning and as a result has been involved in developing a number of sites with specific relevance to the Irish curricula. These include www.scoilnet.ie/hist/, www.scoilnet.ie/geography and www.scoilnet.ie/asgobrachlinn. (http://www.scoilnet.ie 2007)

The Computer Education Society of Ireland (CESI) was founded in 1973. It supports the development of methodologies that help to marry new technologies with a sound pedagogy. Organised and driven by practitioners for practitioners, at all three levels of the educational system, CESI promotes the practical implementation of ICTs at school and classroom level. CESI represents the views of a range of professionals involved in mainstream education in Ireland. It publishes regular newsletters, works with local and regional branches and represents the views of its members at meetings with various agencies including NCTE, DES, SARG and NCCA. In addition CESI showcases classroom best practice through Student Fairs and Conferences. It supports ICT-related work of teachers.

TeachNet Ireland is a project of St. Patrick's College Drumcondra, supported by private-sector companies. TeachNet works closely with the NCCA and other relevant support teams to define content gaps and to develop units to meet this need. TeachNet provides a framework for the design and development of quality online resources to support the various DES curriculum support programmes (eg, Junior Science Support Service, PCSP), while the support programmes assist in the validation of teacher-produced resources. TeachNet aims to provide content from teachers across all areas of the curriculum. (http://www.teachnet.ie/ 2007)

Dissolving Boundaries through Information and Communications Technology was first developed from a successful pilot project entitled 'This Island We Live On' in 1998/99. The two governments fund the programme. Schools at primary, post-primary levels and in the special schools' sector in the two jurisdictions participate in Dissolving Boundaries. Teachers attend a planning conference at the start of the school year when they form their partnerships and plan for the year ahead. Partnerships work by collaborating on a project centred on an aspect of the curricu-

lum agreed upon by the teachers. Pupils use a range of information and communications technologies including video-conferencing, online discussion and collaboration through applications such as Moodle, MS Word or PowerPoint. Working together pupils create such outcomes as collections of illustrated stories and poems; research findings on historical periods; citizenship and human rights issues. Projects range across the curriculum and have included almost as many topics as schools involved.

The Schools Integration Project (SIP) is a central initiative of the Department of Education and Science's Schools *IT 2000* policy framework – the drive to place information and communications technology (ICT) at the heart of the educational experience in Irish schools. The focus of SIP is to foster whole school development in relation to ICT integration by establishing pilot projects in a number of schools working in partnership with education centres, the community, industry, businesses and third level institutions. Since its inception in 1998, SIP has come to consist of almost 90 highly diverse school-level projects, each of which is intended in some way to test out or develop ICT applications, pedagogies and/or resources that may have particular relevance in Ireland. Over 400 schools have taken part in SIP projects and it is hoped that the outcomes of these projects will set standards for best practice in ICT in Irish schools.

The Digital Schools Award was launched by Minister Mary Hanafin, TD in February 2006. This award is a new initiative which aims to recognise excellence in a school's approach to the integration of ICT in learning and teaching. The NCTE is leading this initiative in partnership with CESI, the INTO and the IPPN. 51 primary schools from around the country are participating in this initial phase with the support of their local ICT Advisor. Those schools that can satisfy an identified set of criteria subject to a validation process will be eligible for the award. Successful schools will be awarded a Digital Schools Award plaque and logo that can be used on the school website and literature. Currently, the project is open to primary schools.

Framework for ICT in curriculum and assessment

The ICT Framework sets out four objectives for embedding ICT in the curriculum. These identify the knowledge, skills and attitudes important for students to develop in four areas:

The

Strands	Areas
Objective F	Developing foundational knowledge, skills and concepts
Objective C	Creating, communicating and collaborating
Objective T	Thinking critically and creatively
Objective S	Understanding the social and personal impact of ICT

Framework identifies learning outcomes and learning opportunities for using ICT in curriculum and assessment, at three levels of progression:

Three levels of learning within the ICT Framework	
Level 1	Junior Infants to Second Class
Level 2	Third Class to Sixth Class
Level 3	First Year to the end of the Junior Cycle

The ICT Framework provides a structure for teachers to support them in developing students' ICT literacy, not as a stand-alone subject but integrated across the curriculum. It is an enabling Framework. The Framework is premised on the belief that ICT can add value to teaching and learning when it is used purposefully and with appropriate resources. Use of the ICT Framework will vary from school to school depending on a range of school factors including access to ICT equipment and resources, teacher competence and confidence with ICT and a school's level and stage of planning for ICT in curriculum and assessment.

Leisure and ICT

Computers are increasingly as significant a part of leisure-time pursuits for children as they are for adults. Computers are used in leisure time far more often than at school. An OECD survey of fifteen-year olds in twenty-five developed countries found that Ireland was second last in frequency of computer usage at school. Only two in every ten pupils surveyed used computers frequently at school compared to an OECD average of more than four in every ten. However, six in every ten pupils reported that they used computers frequently at home (OECD, 2007). This can mean that in many incidences pupils are more computer savvy than their teachers at primary level. Many children spend much more time on computers than their adult guardians and teachers. Children, among other things, join online fan clubs, enter competitions and download music and video clips. They create online profiles and join online communities on BEBO[3] for example. They create virtual identities in cyber space and live in simulated realities, hosted by web-based computer game sites such as *SIMS*. This is apart from using *XBox, PlayStation* as well as games for PC. Children are comfortable communicating, playing and socialising online. Educators for the most part may not have to

3 BEBO is one four major social networking websites worldwide. It was designed to allow friends to communicate in various ways. It has developed into an online community where users can post pictures, write blogs and send messages to one another. The site was founded in January 2005 by husband and wife team Michael and Xochi Birch. BEBO is currently the 85th most popular English-language website and the third most popular social networking website. BEBO also announced was the most popular website in the Republic of Ireland in March 2007. A survey of two million profiles by Bigulo.com found that one in three publicly accessible profiles belonged to children under the age of eighteen.

concern themselves with computer literacy. However, teachers need to consider the potential of ITC in teaching students who are already highly skilled computer operators.

Conclusion

In the absence of a government commitment to resource ICT in schools the new *ICT Framework* soon to be published by the NCCA will be an aspiration impossible to implement. Links to universities and institutes of technology or to IT companies prepared to enter public-private partnerships with schools may provide a way forward for some primary schools. Sponsorship of technology for schools and lending technical expertise through such partnerships will help but it is unlikely all schools would benefit equally, leading to an unsatisfactory situation. Access to technology would be available to some of the nation's children and not to others. Government rhetoric needs to be backed up by government spending.

However, it is not in doubt that ICT is used widely in teaching and learning in Irish primary schools, across the curriculum and particularly to support children with special educational needs. There is much evidence of excellent professional practice in the use of ICT in Irish primary classrooms from surveys and reports on various ICT projects. ICT is acknowledged as a valuable tool for teachers in planning, teaching and supporting the learning of pupils. Teachers are to be commended for their commitment to professional development in the area of ICT and for achieving so much with limited resources. So much more can be achieved when the potential of ICT as a resource is released through investment in up-to-date hardware, software and technical support.

6

Collaboration and Co-operative Teaching

In the past teachers tended to work alone with little or no collaboration among them. Teachers are no longer encouraged to work in isolation but are expected to engage in more collaborative processes in order to enhance pupil learning in schools. Nowadays teachers are more likely to share ideas, develop plans together, implement those plans and evaluate outcomes. Through collaboration ideas can be shared, better strategies can be developed and problems solved. Teachers are better able to monitor student progress and to evaluate the approaches used in the classroom.

Characteristics of collaboration

1. It is voluntary, the teacher decides to participate.
2. It is based on parity, all contributions are valued equally.
3. It requires a shared goal.
4. It includes shared responsibility for key decisions.
5. It includes shared accountability for outcomes.
6. It is based on shared resources, each teacher should contribute.
7. It is emergent, it will emerge as teachers are more experienced.

There are a number of prerequisites for collaboration. The following are essential to ensure successful collaboration:

- Reflecting on one's personal belief system – how much is the sharing of ideas valued; what is one's tolerance towards changing standards in one's classroom?
- Refining interaction skills with both colleagues and pupils. These include listening, attending to non-verbal signals and asking questions and making statements in clear and non-threatening ways. These skills also include conducting effective meetings, resolving conflict and persuading others.
- Contributing to a supportive environment; administrative and staff support, teachers efforts and the availability of time for collaboration.

Effective applications of collaboration

The following are some approaches to collaboration in schools:

- **Shared problem solving** is a basis for collaboration. Teachers, as a group, discover a shared need, identify the problem, propose solutions, evaluate ideas and plan specifics. They then implement the solution and evaluate the outcomes.
- **Co-teaching** where both teachers take on teaching and supportive roles.
- **Teaming:** The success of a team depends on each team member's collaborative efforts for the team goals.
- **Consulting** is a specialised problem-solving process in which one professional with particular expertise assists another. The *consultant* contributes specialised information toward an educational need. The *consultee* uses the information to provide direct service to the *client*. For example a learning-difficulties teacher *(consultant)* may serve a new student *(client)* who has a learning disability indirectly by collaborating with the classroom teacher *(consultee)* who provides direct service to the student. (Dietmar, Dyck & Thurston, 1996)

Co-operative teaching

Co-operative teaching is an approach to teaching and learning where two teachers work together to service a group of heterogeneous learners in a classroom. Numerous co-teaching relationships can exist but the focus here is on collaboration between general and special-education teachers in the general education classroom, as this is most likely situation to occur in Irish primary school classrooms. The three main keys to success in co-teaching are planning, disposition and evaluation.

Planning

At a minimum, teams need 10 minutes per lesson to plan (Dieker, 2001). This planning should not focus on a particular child but on the whole class. Child-specific issues can be addressed after the lesson planning is completed. Time is a vital ingredient in the planning process. The principal teacher plays a vital role in the organisation of timetables for resource and special-needs teachers. The principal teacher can promote the idea of co-teaching by providing information on the process and making time for planning and assessment. Both teachers need time to meet and plan and to develop a rapport with each other. Teacher preparation includes assessment of the current environment and the creation of a workable schedule. The class teacher can provide a general overview of content, curriculum and standards in the class. The special-needs teacher can supply individual plans, goals, objectives and possible modifications for students in the shared class.

Disposition

Before starting the process, discussing issues such as fairness, grading, behaviour management and philosophy of teaching are important in order to become an effective team. Co-teaching can expose one`s strengths and weaknesses and teachers could find this threatening. A great deal of trust needs to be established as teachers move from a social relationship to a professional one. Feelings of intrusion or invasion are to be expected at first and a safe environment needs to be firmly established at an early stage. An environment that promotes a spirit of parity is necessary for both parties to succeed. It is necessary to 'give and take' in the early stages as both teachers must make compromises. Each person's contribution must be equally valued and each must have equal decision-making power.

Evaluation

A systematic method should be used to evaluate both teacher satisfaction and student learning with this model. Modifications and adjustments should be an expected part of the co-teaching process. At least once a month the teachers should set aside time to discuss the following two critical questions:

Is what we are doing good for **all** students?
and,
Are the needs of both teachers being met?

Short term evaluation is also very important if co-teaching is to succeed. Daily debriefing, immediately after the pupils leave, is seen as the most effective method of reflecting on the day`s events and planning for the following day.

Benefits of co-teaching

INSTRUCTIONAL BENEFITS FOR PUPILS

These include a richer classroom experience as teachers pool resources, materials, experiences and strengths. Students are exposed to different and sometimes divergent examples, anecdotes and stories and ways of thinking. Bess (2000) suggests that instructional roles are so diverse and require such different mixes of tasks, talents and temperaments that some parts must be played by more than one person. Co-teaching allowed teachers to implement approaches and methodologies they might not have considered if teaching alone.

PROFESSIONAL BENEFITS

Miller & Miller (1997) identify three skills which determine the dimensions of teaching competency. These are, (1) knowledge of subject matter (2) knowledge of instructional planning, delivery and evaluation and (3) personal characteristics and behaviour. Co-teaching provides an opportunity for professional growth in these areas.

(1) Knowledge of subject matter

The co-teaching experience enabled teachers to learn from each other. Being released from the responsibility of being 'expert' allowed teachers to pose true questions as learners within the context of the school day. Both teachers emerge with a strengthened knowledge base and enriched understanding of areas of the curriculum.

(2) Knowledge of instructional planning, delivery and evaluation

Teachers share activities and materials they had personally found successful in separate teaching experiences. One may be an expert in setting meaningful objective tests while the other may be more proficient at posing higher-order questions to guide student exploration. The skills are transportable to future instructional situations. Teachers take turns in routine tasks of preparation for class (eg, acquiring materials, or correcting tests) and try out new ideas for class activities on each other.

(3) Knowledge of personal characteristics and teaching behaviour

The sharing of responsibility is cited as one of the most enriching and satisfying experiences of co-teaching. Teachers consult about strategies to deal with issues of student behaviour and performance. Personality clashes between pupil and teacher were discussed at daily debriefings. Teachers checked perceptions and explored prejudices before making decisions on how to deal with students

Strategies used in co-teaching

1. **One teaches; the other supports.** One teacher leads the lesson and the other takes a supporting role. This is an easy method to implement and a good starting point for collaboration.
2. **Alternative teaching.** The class is divided into two groups, one large one small. The small group receive remedial help in this case. The risk of this style is that the small group are publicly identified as needing help.
3. **Parallel teaching.** Two teachers teach two groups in the same content. In this case the class is divided into two even halves. The benefit for the pupils is that they are in a smaller group and there is more pupil participation. There is, however, a large amount of time needed for co-planning which may make this strategy unattractive.

4. **Station teaching.** Curricular content is divided into two parts. One teacher teaches half of the content to half of the students while the other teaches the other part to the rest. The groups then switch teachers to complete the lesson. The pupils gain benefits of two teaching styles and points of view. The difficulty lies in the need for very careful planning and timing to ensure a smooth transition from one teacher to the other.
5. **Team teaching.** Both teachers jointly plan and are equally involved in the delivery of the lesson. One teacher may begin a lesson by introducing vocabulary while the other provides examples to place the words in context. The benefits for teachers come in the form of a rich opportunity to model learning strategies, question-asking and problem-solving behaviour in the class. The difficulty arises in the need for very careful planning and co-operation between the two teachers involved.

Which approach is best depends on student needs, the subject being taught, the teachers' experience and practical considerations such as space and time for planning.

To maximise the potential of co-teaching, training, planning time and active instruction by both teachers are critical. Co-teaching must be supported by ongoing professional development opportunities and guiding documents for teachers and administrators. Key instructional practices in the classroom must be identified and regularly-scheduled times for co-planning and coaching must be made available. Friend (2003) and Deiker (2005) have recommended that co-teaching teams use self-assessment to improve their performance.

The co-operative school

In a co-operative school students work primarily in co-operative learning groups, teachers and school staff work in co-operative teams as do district administrators. Each level of co-operative team supports and enhances the other levels. **Co-operative teaching teams** of two to five teachers work together to increase teachers` instructional expertise and success. These are formal work groups that have clear goals, active and committed members and designated leaders. The success of a team will depend on each member`s understanding of mutually shared goals and their collaborative effort for the goals. Teams come from different grade levels to form a collegial team with the mutual goal of providing quality education for all students. The teachers in a team are jointly responsible for one cluster of students over a number of years. The strengths of teams are found in positive interdependence among teachers, shared accountability and a shared purpose.

Characteristics of effective teams

The following are characteristics of effective teams:

- All participants understand, agree to, and identify the primary goal for the team.
- The team is characterised by open communication that includes ideas, opinions and feelings.
- Team members trust one another and no team member will deliberately take advantage of another.
- Team members support each other by demonstrating care and concern.
- Team members manage their human differences. They clarify how they are different from one another and use these differences as strengths for creative problem solving rather than as hindrances to problem solution.
- Teams meet and work together only when necessary.
- Team members have fundamental team skills, including those for communication, those for addressing task goals and those for maintaining effective team functioning.
- Teams have leaders but recognise that leadership is shared by all team members.

Two other types of co-operative teams are also used in these schools.

Task forces are used to consider, study and diagnose a school problem. These teams gather data, consider solutions and make recommendations to the staff as a whole.

Ad hoc groups are formed during staff meetings to involve all staff members in making decisions. The *ad hoc* team listens to a recommendation, considers whether to accept or modify the proposal and reports their decision to the entire staff. Staff meetings should reflect the co-operative nature of the school. Formal and informal co-operative groups, co-operative base groups and repetitive structures can be used at staff meetings just as they are in the classroom.

The induction of newly qualified teachers (NQTs) has provided teachers with many opportunities for collaborative work. In most schools, an experienced teacher works with a teacher new to teaching or new to the school, at least on an informal basis. It is often no more than the teacher next door taking the new teacher 'under her wing' in the first year of teaching. In other schools, the school designates a staff member to mentor the newly-qualified teacher into school systems and the profession. The National Pilot Project on Induction has introduced a more supportive system for NQTs, but this project is only available to 400 NQTs in the current school year. In-school mentoring of beginning teachers has elements of collaborative planning as well as collaboration in classroom practice. The chance to observe more experienced teachers, co-teach elements of the curriculum with them and to be observed is built

into the formal programme of teacher induction. The Department of Education and Science is committed to ensuring that all NQTs will be able to avail of induction over the next few years.

It is also important to note that collaborative practice in other systems where more teaching personnel is available has evolved and has developed new and various models for sharing and distributing the teaching role. Irish primary teachers may learn from developments in other systems and some practices may be adopted or adapted to the unique constraints and characteristics of the Irish primary education system.

7

Teachers' Experiences of Methodologies and Approaches

INTRODUCTION

In order to ascertain the views of teachers on the various methodologies outlined in the revised curriculum focused group discussions were set up by the Education Committee. Focus-group research involves organised discussion with a selected group of individuals to gain information about their views and experiences of a topic. This is a qualitative approach to the gathering of information that relies on the interaction within the group based on the topic supplied by the researcher. It is viewed as a way of understanding reality from the point of view of the individuals involved in the discussion. The main purpose of the research was to draw on teachers' attitudes, feelings, beliefs, experiences and reactions to the various approaches to teaching and learning.

The groups were assembled at a variety of locations – six groups in total – througout the country and were facilitated by members of the Education Committee. Participants were selected from a wide variety of schools, rural and urban, large and small and from both advantaged and disadvantaged areas. Teachers were presented with a range of issues in the form of questions and their views are presented in the following section of the discussion document.

The environment

INTRODUCTION

The environment is used in a multiplicity of ways by all teachers throughout the curriculum. It is possible to scaffold children's learning by first of all using the child's own physical environment of home as 'it is a concrete resource that they are familiar with and can talk easily about'. This can be broadened out to include their town/village/county/province/country/Europe, other continents/the world.

LANGUAGE IN THE ENVIRONMENT

By starting with language for junior classes, learning support pupils and those 'who don't have English as their first language' teachers 'label things around [them] to create a print-rich environment which is referred to often during teaching'. 'You have to link whatever you are doing with something that makes sense to the child in terms of the child's world'. Children are walked from their own room to another classroom and are given a 'sense of location' especially in larger schools where children don't actually know where to find various classrooms and where they have no sense of orientating themselves. For newcomer children in particular, 'an awful lot of their learning is being done with them on their journey to the actual room where they are going and it is fantastic to watch the development of the children since September who arrived without a single work of English at all'. Language is further enhanced by visits to the library, meeting an author: 'This sparked off a huge interest in a wide series of books'.

In the classroom the numbers of parents involved in Paired Reading have decreased 'as the economy has improved and most parents are working where they wouldn't have been 10-15 years ago'. Úsáidtear na téamaí Mé Féin, sa Bhaile, An Scoil, Bia, An Aimsir agus Caitheamh Aimsire go forleathan trí mheán na timpeallachta sa Ghaeilge. In the Irish the themes of Myself, Home, School, Food, the Weather and Hobbies are all extensively related to the environment.

THE EXTERNAL ENVIRONMENT

Many parents come into classrooms to talk to pupils about their occupations as Firemen, Gardaí, Blacksmiths and school caretakers. Children who have gone on trips to the park 'where Woodland Trust representatives met us and showed us trees in Autumn'. They have visited people working on an archaeological dig and met Ordnance Survey workers.

In SESE, children go on field trips to local parks, the cemetery, lakes, woodlands, fishfarm, museums (local, national and natural history). Their own local history intermingles with geography when looking at: the physical landscape, architecture, planning, placenames, transport, photographs, surveys and when doing project work. All of these develop skills of observing, classifying and recording. Many schools have already obtained, or are trying to earn a Green Flag, and would have been involved in cleaning the school yard, collecting litter, recycling and planting flowers. 'In this way children understand the importance of caring for the environment and they are actively involved in maintaining a clean school'. The pupils' environment/Green flag committee would have meetings and report back their findings and decisions to their classes and to the principal. All of this is 'quite labour intensive' for the teacher. 'There is a lot more work involved for the teacher than if you started from a textbook'.

THE ARTS

In Drama and SPHE, children discuss and act out in role play what they would/could do in certain situations. They compose their own Drama. They can understand and remember it better. In Visual Arts education, teachers use the National Art Gallery and local artists to explore and examine work. However, according to the INTO Curriculum Survey (INTO, 2006) most art appreciation seems to be taking place within the school environment as only 23% of respondents claim to have brought their students to visit an art gallery in the past year and 37% of respondents have provided their pupils with an opportunity to see artists and craftspeople work in their own environment.

PHYSICAL EDUCATION

In Physical Education, many pupils travel by bus to other towns to access a swimming pool for aquatics. While travelling they examine features of towns and landscape between towns. According to the INTO Curriculum Survey 2006 (INTO, 2006) regarding PE, 58% of respondents did not have access to wood, park or forest for outdoor and adventure activities and 30% stated that aquatics were never taught. More than half (57%) of respondents stated that pupils paid to participate in aquatics, and less than half (46%) of respondents have the use of a pool between five and 26 miles, with 1% travelling more than 26 miles to access a pool.

MATHEMATICS

In mathematics, children use concrete materials: 'I would find that it actually brings home to them more clearly how problems relate to real life practical tasks. In many instances estimates are given first followed by answers. Children measure the area of items using a trundle wheel, a metre stick or ruler as appropriate; use money and go shopping using supermarket brochures. Children see shapes all around them and also follow Maths Trails.'

LIMITATIONS AND CHALLENGES

Some teachers feel that 'children in rural areas are much more aware of their own environment' as they have more exposure to it. 'In urban areas, they don't tend to go beyond a certain area'. According to the INTO Curriculum Survey of 2005, the environment is frequently-used by teachers: 27% use it *often* and 43% *sometimes*. It is a frequently used methodology in science by 65% of teachers. However, overall, 30% of teachers *seldom/never* use the environment as a teaching method and almost one fifth (19%) of pupils are never taken outside the school environs on educational walks. Health and safety issues, class size and high transport costs account for some of this. Overall, the environment is more likely to be used in infant classes than in 5th or 6th classes.

HEALTH AND SAFETY

Some problems relate to health and safety. 'Bringing children outside of the school I find a nightmare, because traffic is so bad and you really worry about them if you bring them anywhere, especially when they are so small'. 'I used to work in a really tough area and taking the kids out, you could get assaulted or have people throw stuff at you'.

COST

There is expense involved also, as you need to hire a bus when you are going anywhere for health and safety reasons. This applies even if public transport is available.

CLASS SIZE

Class size is also an issue. 'I have a class of 22. I am finding that I can do so much more of that type of work with them than 32'. 'I have 31 in my sixth class and I would be slow enough to do that because I would have to organise to get extra help because I think senior classes need to be watched just as much as Junior Infant classes for other reasons'. 'I have 21 this year and I have a SNA. It is just like a dream because you can plan these things and there is somebody there to give you a hand…. If one of the children needs to go to the toilet halfway through the trail there is somebody to take them back'.

Teachers feel that they could use the environment more if they had smaller class sizes or more qualified staff to help out. 'I think we would all agree that the fruits of it are fantastic. They learn more using the environment and definitely it is more relevant for them but it is more difficult to manage it.'

FAMILY CIRCUMSTANCES

In SPHE children discuss themselves and their families. 'It is very important to be aware of a child's background and home environment because if we don't then it is hard to realise where they are coming from'. Some parents are single, some divorced, and others are separated. Children may live with one parent and often meet or stay with the other parent at the weekend. Parents may have separated and pupils may be living with parents of other pupils attending the school. This all affects how you deal with the strand unit My Family. 'It can be tricky because families are quite complicated now'. 'Children can tell you more than their parents would like … then parents come in accusing you of getting the information out of them, so I find I keep a distance'.

Active learning, guided activity and discovery learning

INTRODUCTION

One of the key pedagogical principles of the primary curriculum is guided activity and discovery learning. In the focus groups, participants discussed active learning

methodologies and described how children were active learners and how they were guided through activity and discovery in their classrooms.

AGREEMENT WITH PRINCIPLE

It was pointed out that guided activities vary from teacher to teacher depending on individual strengths and personalities. Participants felt that it was important to accept the fact that one may not feel competent to take on what another had done but should be confident to approach activities from a position of strength. There was general agreement that activity learning was very important for children. One teacher said "If you discover something for yourself you retain it far better than if somebody tells you the answer". There was a comment from one teacher who suggested that a balance is needed between the behaviourist and constructivist approach to education, in that the teacher has to impart basic facts first before children go on to work things out for themselves.

GUIDED AND ACTIVE LEARNING

There was agreement by many teachers that any kind of involvement with concrete materials or being involved in the processes of writing or art constituted active learning. One teacher stated "It doesn't have to be group work, it can be discussion or debate or hands-on learning". It was felt that active learning applied to more than just Maths and Science. For example, in English it can be used in creative writing where children redraft a story and checks spellings using a dictionary to find the words for themselves and to take responsibility for their own work. One contributor felt that the Revised Curriculum had benefited the children greatly in terms of their own involvement in their learning. "We are trying to create an independent learner who doesn't constantly look to the teacher for direction at the end of each activity". Children are encouraged to seek out library books or work cards for themselves when they have completed a task. Teachers are striving towards teaching children the skills to seek out the content in their own learning. Art was another area where children can discover for themselves for example mixing colours to produce another.

A CHANGE IN APPROACH

Teachers expressed the view that they must not pressure themselves to cover the same amount of content as in the past. The wide-ranging curriculum and variety of methodologies means that teachers' attitudes to their own teaching must change. One participant put it as follows, "Something has to give, let's hope it is not our sanity." Increased resources have enabled children to become active learners. The internet has opened up a huge knowledge base and the supply of information is ever changing. It was pointed out that parents should be told that education is no longer about simply teaching a b c and d but about teaching them how to find out about a b c and d. One

teacher reported comments from two secondary teachers as to the change in the children coming to them from primary school. Both felt that children nowadays are engaging more with the curriculum.

SCIENCE

Many comments in relation to active learning and guided discovery referred to the area of science. One teacher said that teachers need to have more belief in the children's ability and suggested that aspects of the science curriculum could be covered by supplying the materials and letting the children work out the experiment for themselves. Many participants spoke of the difficulties of setting up science experiments. Time and resources posed great difficulties for those with large classes. One teacher suggested that science experiments or similar activities could be prepared in advance by a group of teachers taking one station each and than rotating the experiment or activity between their classes. This would cut down on setting up time in class and allow maximum time to be devoted to the activity itself. The setting up and tidying away of equipment was a major logistical problem for many while others complained of lack of funding for equipment.

There was a general consensus that common sense must prevail and that bigger groups may be the only practical means of providing experiments in large classes. The need for involvement of SNAs in setting up and helping out during science experiments was generally acknowledged. One suggestion was for the teacher to set up an experiment and the children to predict the outcome. If space permits the experiment would be left on a table in the classroom so that the children could take turns to repeat what they saw the teacher do. It was felt that teachers would need to use their judgement to check that learning was going on. One speaker felt that there was a great lack of funding and resources which left schools "scrimping and saving" to keep the science curriculum going in the classroom.

CLASS SIZE

Class size is a problem for physical involvement in learning where children are actively manipulating and engaging with materials. It requires an awful lot of planning and microteaching from the teacher. Smaller numbers in class make active learning easier to implement. One participant pointed out that she now has a smaller class and an SNA to help and this means that activity sheets are corrected sooner and the children are encouraged to cooperate with and help each other. The teacher emphasised that a system of work cards and prizes for work completed can only work successfully in a small class, as otherwise it is a logistical nightmare for the teacher. The need for smaller numbers in class was emphasised again and again as being vital to the success of these methods.

IN-CLASS SUPPORT

Many teachers pointed out the need for more adults in the classroom to enable group work for things such as science experiments. Many felt that teachers should seek parental involvement to enable the class to be split up into groups of five at most so that all of the children could then become engaged in the activity. One teacher pointed out that art activities were far easier to set up and complete when there was enough space in the room to leave unfinished experiments to be returned to. One suggestion was that special days be set aside for one class to carry out science experiments or other activities with the help of SNAs or resource teachers. In this model each class would have an allocated day on a rota basis and the parents could be enlisted to help as well.

GROUP WORK

It was felt by many participants that small-group work was very effective in teaching certain aspects of the curriculum. One teacher found that poetry lessons were very successful when small groups selected a poem to be learned on a rota basis. Various groups would then do a drama activity or sound effects or freeze-frame to show their reaction to the poem. This teacher stated that she found this method very effective for Irish poetry.

INFANT CLASSES

Infant teachers pointed out that children were physically very active in the junior classes. They jumped and danced while saying rhymes or playing counting games. In Maths they love estimating how many lollipop sticks long a table is and then physically measuring it. It was felt that this activity level decreases as the children gets older.

PLANNING

Time to meet and prepare was seen as a vital ingredient in the successful introduction of guided activities. There was a general feeling that the benefits of activity in discovery learning would not be noticed until parents have become accustomed to the concepts and been involved in the process themselves. Time to talk to colleagues about the success or otherwise of various activities or how to co-operate to set up learning stations was seen as vital to the success of these methods. A notable comment on this subject was that time for co-operation was "far more important than note writing which is simply rewriting what is already in the curriculum documents".

It was generally agreed that extra teaching personnel was necessary to enable the various ability groups in class to accomplish allocated tasks. Teachers spoke about exploiting strengths to share the burden of teaching. "I take her class for visual arts and she takes mine for tin whistle". Others pointed out that there was a need for floating teachers to cater for subjects like Music and Computers where expertise could make

learning a much richer experience for children. An extra teacher was seen far better than parent volunteers as another professional would guide the learning much more effectively.

CLASSROOM MANAGEMENT

In order to assist their classroom management, some teachers move pupils every two weeks. This ensures that each pupil gets to sit beside every other pupil at least once throughout the course of the year. Teachers have found this to be a great learning experience for all the children taking into account their different learning styles, behaviour and social backgrounds. A lot of learning opportunities are experienced through this and other controlled social interactions such as circle time and role-play.

ICT

Use of ICT is varied throughout many schools depending on the number of computers in each classroom – some have only one per room. The benefits of ICT, however, were recognised: "The internet brings the whole wide world into your room. Pupils are enabled to research many topics". Digital cameras are used at all class levels by many teachers and interactive whiteboards are also being used in some schools. One participant suggested that computers were a very useful tool in terms of active learning. Infant classes use *Letterland* programmes and older classes can research their own information and record and edit in Word. Work done in school can be followed up at home in subjects such as history as there are some excellent sites that can be found through Google. One class teacher discovered that "every single child has an internet connection and this allows them to continue researching information they had started in class on history". In the view of teachers, computer simulations work well in History where they have proved to be quite manageable and not as time consuming as visits to real castles or other places. Work done at home on the PC is presented in school in a format that the child chooses eg, models or pictures or a written report. This gives scope for children to express themselves and work to their strengths.

Integration

INTRODUCTION

In general, integration is working well and teachers have found that "the more teaching that you do, the more obvious it becomes what you do in certain subjects". It is certainly not something new. "I think it is a methodology that we always used. The thematic approach in our planning as teachers was something we always did before the 1999 curriculum". It does, however, require "a lot of planning". "It also requires spontaneity so that teachers avail of opportunities as they arise". The tsunami as a theme integrated subjects like English, Gaeilge, Geography, Science, Religion,

Drama, Visual Arts, Music and SPHE, and yet, it was unlikely to have been included in the yearly plan. Teachers outlined the difficulty in describing how they integrate aspects of the various subjects. As one teacher expressed in relation to the 'Cúntas Míosúil' (monthly report), teachers feel the need "to put things in their boxes, but where you have integration … one subject will be more dominant than others. How do you on paper justify doing each subject equally?"

AGREEMENT IN PRINCIPLE

Teachers expressed their agreement with the principle of integration, but indicated that textbooks can and do dictate the amount of time spent on certain themes. As one teacher stated, "At least if I complete the textbook I know that I have covered the curriculum". Many subjects are integrated, for example "Feasts festivals, seasons and local events can be studied in different subjects such as Irish, English, Art and Maths". The environment, internet, digital cameras, and tape recorders are excellent resources for many subjects. English integrates with all subjects. History and Geography blend naturally together also. Gaeilge and PE work well as does Maths (area length, time zones when going on holidays) with Geography.

INTEGRATION IN PRACTICE

PCSP encourages teachers to integrate subjects by using themes, though some teachers stated that some inspectors are of the view that there is too much integration. It was commented that some student teachers "Feel their whole day has to be integrated to a ridiculous extent and the children are bored by the end of the day", but that in practice there was no need for the whole day to be integrated with a theme running through the whole day. One teacher stated "I wouldn't integrate for the sake of integration… sometimes it is the spontaneous thing that you hadn't even thought about five minutes ago and you're excited by it and they are excited by it..' and the whole thing takes off and that's teaching!"

According to the INTO Curriculum Survey of 2005, respondents listed the curricular areas they integrated with each subject. In some subjects, integration occurs naturally with parallel subjects whilst some other subject areas allow for a much wider degree of integration. English is widely integrated across all curricular areas including Irish. Similarly, Maths is widely integrated with English, Science, Irish, Art and to a lesser extent all other areas. Gaeilge is integrated mainly with the Arts subjects – Music, Drama and Visual Arts, with Maths also being included on a regular basis. Visual Arts is integrated on a cross curricular basis with English being the dominant subject. Science is mainly integrated with Maths, History, Geography and English. History is integrated with English and Geography primarily and also with Science and Irish. Geography is integrated with Science, English, History and Maths. Music is integrated with English, PE and Gaeilge to a great extent and Maths and Irish to a lesser

extent. PE is integrated with Irish, Music and Maths. SPHE is mainly integrated with English, Art and Music.

Higher-order thinking and problem-solving

INTRODUCTION

The curriculum identifies 'summarising, analysing, making inferences and deductions, and interpreting figurative language and imagery' as higher order thinking skills. Activities that foster these skills are observation, collation and evaluation of evidence, asking relevant questions, identifying essential information, recognising the essence of a problem, suggesting solutions, and making informed judgements (*Curaclam na Bunscoile* 1999, 16).

AGREEMENT WITH PRINCIPLE

Members of all the groups acknowledged the importance of developing higher order thinking skills and the ability to solve problems. The ability to solve problems was identified as a life skill. Participants referred in a positive way to thinking outside the box, divergent thinking, actively teaching problem solving strategies and Bloom's Taxonomy of hierarchical thinking. One participant thought that "questioning was the best way to promote higher order thinking". Questioning can challenge prejudice and views not fully considered and help establish more informed opinions. While initially problem solving was generally taken to be part of the Mathematics curriculum many participants also mentioned it in conjunction with other curricular areas. Science and Social Science, Visual Arts, Construction and reasoning and logic in class discussions were particularly mentioned.

CHALLENGES

There was an acknowledgement in the groups that the teaching of higher order thinking skills and problem solving is in fact a weakness in the primary education system in Ireland. Some of the reasons why this might be so are listed below. The various groups identified a number of challenges to encouraging higher order thinking and the teaching of problem solving strategies in their classrooms. The following is a list of the inhibitors to good practice reported by the teachers:

- Time management.
- Curriculum overload.
- Large class size.
- Oral language deficit particularly in areas of educational disadvantage.
- Poor reading skills.
- Poor listening skills.

- Difficulties with short-term memory.
- Multi-classes.
- Catering for children with special educational needs in the mainstream classroom.
- Teaching principals experience of a greater workload and demand on their time.
- Motivation at fifth and sixth class level.
- Expectations of children to be 'spoon fed' the curriculum and solutions.
- Poor ratio of teacher talk time to pupil talk time.
- A system tendency to value only the correct solution to a problem.

Time Management, Curriculum Overload and Class Size

Teachers felt that the logistics of time management and curriculum overload militate against allowing time for much hypothesis and discussion leading to agreed or shared solutions. Very often when a discussion is beginning to develop and the interest of the children is awakened it is time to move on to something else. Large classes leave the teacher less time to hear each voice and know the strengths and needs of individual children. "Time is the scarcest resource of all" …in schools and this is "because of class size." Teachers recalled hearing many times mention of the built-in 'discretionary time' at the seminars to roll out the new curriculum. Many enthusiasts of the various subject areas were accused of encouraging teachers to commandeer it for their area of particular interest. However, in practice in the majority of cases this time was required to try to adequately cover literacy and numeracy. While seen as valuable, even essential, the teaching of higher order thinking skills and problem solving strategies were generally viewed as areas to cover after the basics and more essential curricular areas were covered. As one participant put it "The curriculum is quite packed and the time table very busy, even taking discretionary into account it is hard to find time to devote to higher order thinking and problem solving."

Teaching in multi-grade classes, being a teaching principal and catering for children with special educational needs in the mainstream classroom, were viewed not as specific challenges to encouraging higher order thinking but as challenges in general to providing access to the full curriculum. These additional demands on teacher time and energy require the teacher to be particularly inventive with time management and creative about implementation.

Language deficit particularly in areas of educational disadvantage

Limited vocabulary, poor sentence structure, lack of expressive and descriptive language are not confined to areas of social disadvantage, however, the groups felt that there was a higher prevalence in such areas. One teacher believed that, "Higher order thinking and ability to solve problems depends on language, many of the children come to school with low levels of oral language, reflecting a poverty of language in

their homes. It is difficult to develop higher order thinking when a basic language programme to teach listening skills, sentence structure, basic grammar, question constructions is what is necessary."

Another teacher pointed out that, "Children are not talking soon enough. It is through language that you move from the concrete to the abstract. If you can't think in the abstract you cannot do Mathematics". According to the teachers, today's children often live in materially and technologically rich homes but are poor in terms of the quantity and quality of time spent with those who could model good language. They often suffer from a severe lack of richness in their language environment.

Another participant added that, "reading difficulties are a barrier for some children in mathematical problem solving exercises." It was felt that many children would score far better in the problem solving areas of standardised tests of mathematics ability if the question could be read to them.

Difficulties with short-term memory

A number of teachers identified short-term memory deficiency as a barrier to developing problem solving strategies. One verbalised her experience saying, "Having read the problem it is very hard to get them (the children) to remember what they have been asked." Short-term memory difficulties also make it difficult for children to remember sequences, cause and effect and the details or facts to support an opinion. This illustrates the fact that higher order thinking skills cannot be developed before the prerequisite skills have been mastered by the learner. Another of these basic skills was identified by a focus group member when she commented, "I find that a basic prerequisite skill, that of being able to pick out the pertinent information from the facts provided, is missing." Other basic skills leading to higher order thinking mentioned in the focus groups included sorting by category, listening, verbalising a process, identifying similarities and differences, social and environmental awareness.

Motivation at fifth and sixth class level

A small number of teachers teaching senior classes reported that in the senior classes it was more difficult to find areas of interest that are relevant to explore with their classes. This was especially true in the later part of sixth class, particularly when the same teacher took the class in fifth and in sixth class. Again this is a general challenge to curriculum delivery not particular to the area under discussion. However where classroom management and maintaining discipline takes up a disproportionate amount of teacher time and energy then there is less likely to be time for debate and to explore complex ideas at a deeper level.

Expectations of children to be 'spoon fed' the curriculum and solutions to problems

A focus group member expressed the opinion that "It is important to get the children

to think for themselves, for teachers to challenge them more instead of spoon feeding them". This group member articulated a general opinion that there is still a tendency to deliver knowledge in appropriate sized portions to be committed to memory. The challenge is to resist this tendency and to teach children instead how to access knowledge themselves, to engage with it, form opinions based on evidence and share them, and to listen to alternative views critically.

Poor ratio of teacher talk time to pupil talk time

Here a participant cited the findings of studies conducted in Ireland and in other systems investigating the ratio of teacher talk time to pupil talk time. The conclusions were remarkable in that across systems and through out systems the amount of teacher talk time exceeded pupil talking time by a factor or more than four to one and was greater at second level than at primary rising to a factor of nine to one. Pupil talk time consisted mainly of responses to teacher questioning as s/he tried to confirm that s/he had been understood or repetition of what the teacher had said. This has to be a particular challenge to the development of higher order thinking. The teacher added that "we really need to let the children talk and be patient". The challenge will be to redress the imbalance. There are other ways for children to access information than to be told by the teacher.

A system tendency to value only the correct solution to a problem

A number of participants believed that the Irish primary education system values the correct answer more than it does the process of finding the answer. It is true that the capital of Turkey is Ankara. However the answers 'Istanbul' or 'Constantinople' have some merit. They may not be correct but there is a vast amount of learning in proposing these as alternative answers. Many participants reported that they had taught children who hate to be wrong or make mistakes. The challenge to teachers here is to create learning environments where the learners can make mistakes, be wrong and be praised for their attempts to find the solution. It was also pointed out that when standardised tests in mathematics try to test problem solving ability, credit is only given when the child gets the correct answer. A test which gives credit for the process would give a more accurate assessment of a child's ability in problem solving.

Concluding comment

Despite the difficulties mentioned there was evidence of good practice in the focus group discussions, as teachers strive to teach and encourage higher order thinking, skills and strategies. Among the practices mentioned were the use of brain-teasers, puzzler books, tangrams, 'quizzlers' and workbooks with problems, there were teachers who put a problem of the week to the children and some schools which posed

school wide problems at assembly times. Educational websites which offer a resource bank of graded problems for use in schools are used by some of the schools represented. The attempts at solving the problem are placed in a solution box. The correct solution is given at the following assembly. Teachers also reported the use of questioning from concrete to the higher order to stimulate discussion and challenge misconceptions and preconceptions. It was also heartening to note that higher order thinking skills are taught across the curriculum, evidenced by many opportunities for creativity, debate and self expression and by the countless possibilities to respond affectively to beauty in art, movement, language and nature. The critical challenge for teachers in Irish primary education is develop the language for thought and expression in the children in our care.

Collaboration

INTRODUCTION

There are many forms of collaboration in schools, with teachers collaborating in curriculum areas, regarding after school activities, planning and review and supporting colleagues. Teachers collaborate in sharing resources, ideas and best practice with a view to enhancing their own teaching and their pupils' learning. Collaboration has seen a shift from an emphasis on individual accountability to whole school or collective responsibility for planning, curriculum delivery and policy development and implementation. This change has come about gradually over time as is based on changing views on how organisations function best. In the Irish primary education system some of the results of this change are the move from Tuairiscí Scoile to Whole School Evaluations, the introduction of the revised curriculum, expansion of middle management structures in schools, new requirements on preparation and shared ownership of a Plean Scoile and the investment in School Development Planning.

SUPPORT FOR COLLABORATION

In all of the focus groups that discussed collaboration with colleagues, teachers' comments were generally positive and they identified many benefits of collaboration that enhanced their teaching and pupil learning. Collaboration enhances teaching primarily in that it has the potential to remove the pitfalls inherent in working in isolation. It can bring the expertise and knowledge of many together to discover better ways of achieving common goals and bring that same collective wisdom to help any individual in difficulty. It creates the possibility to develop strategies and learn new ones, can challenge practice that has not changed over time, allows for a forum where good practice can be shared, gives opportunity to engage in solution finding processes and can challenge prejudice by facilitating looking at challenging situations from various viewpoints. The benefits of collaboration are evident in the following comments:

"I feel that sharing problems, swapping ideas and offering assistance to each other greatly enhance our teaching".

"We are lucky in our school to have a high degree of collaboration (among staff members). It is a huge help to ensure that the children receive the best (education) we can provide."

"I feel that collaboration is 'the' resource … my colleagues are a fountain of knowledge and a huge resource … a sounding board (for ideas and reflection) and an emotional support."

"It is absolutely essential that you collaborate and swap ideas".

"I love hearing what other people (teachers) do …"

Many teachers welcomed the opportunity to reflect on their classroom practices with colleagues and to hear from other teachers about what works well in their classrooms. Sometimes the ideas shared are not entirely new but serve to "jog your memory," as another teacher put it. Listening to a colleague talk about classroom practice can be a reminder of methodologies and strategies buried deep in the subconscious mind by the passing of time but which were once an important part of a teacher's routine.

Other teachers noted that they had observed teachers struggling in demanding classroom situations reluctant to admit it for fear of appearing incapable, but that collaboration has helped teachers to be more open about seeking advice and help. One teacher stated that "I used to work in a very tough area and it was clearly seen as a sign of weakness if you admitted to having problems with children," and on realising that a colleague was having problems remarked "…but she would never admit it in the staff room as there was a lot of one up-manship …" In a more collaborative environment this would not be the case, as another teacher commented; "I think that teachers are much more open now and can say that they are having terrible problems with … and has anybody any help for me? Rather than just trying to disguise it."

Working collaboratively shifts the responsibility for success from the individual to the whole school community. Accountability is shared. Teachers are not only responsible for their own classrooms, but, in part, responsible for everything that happens in every classroom and in every area of school activity.

SPECIAL EDUCATION

A common theme in the various focus groups was collaboration with teachers without a mainstream class remit and with special needs assistants. Guidelines on special education require that the process of preparing IEPs (Individual Education Plans) be

collaborative and it is expected that classroom teachers, teachers in special education and the principal teacher work together with other relevant professionals and parents. The class teacher works collaboratively in providing support for a child with special educational needs. A teacher working in special education commented that for "learning support/resource teachers there would be an enthusiasm around at the moment for such personnel going into the classroom," to provide support.

Co-operative teaching generally happens when a teacher in special education works with a mainstream class teacher in the classroom. Many teachers' commented favourably on in-class support. A typical comment was: "The resource teacher comes into my class for maths two days a week. He is able to help a group that might be having difficulty. He is very flexible and that is brilliant. It works really well." One resource teacher thought that providing in-class support changed the way the children regarded her. "They don't see me as the person who takes weak children anymore, they see me as the person who does Maths. That isn't a bad thing." The teacher believed this was because she worked not only with her target children but was able to help any child who encountered difficulty. In inclusive classrooms teachers often work together with colleagues who are special needs assistants assigned to the children who have special educational needs.

This practice was generally welcomed but some teachers had reservations. One teacher said that, "I find it very difficult when the resource teacher comes in to work because the children can't focus on what they are meant to do. They are being distracted by what is going on" (in the other group). The point here was that sharing the classroom space is not in itself collaboration and that it might be more effective to follow a joint programme of learning, 'the resource children would then be following similar themes,' and working along with the rest of their class.

COLLABORATION, SUPPORT AND SHARING PRACTICE

A very common theme in the focus groups was that of generosity. Teachers gave many examples from their experience of teachers supporting each other. Formal and informal mentoring of teachers new to the school or the profession, teachers of infants releasing mainstream class teachers to allow for collaborative planning, collaborative planning in class groupings taking place after the end of the school day, teachers freely sharing expertise, knowledge and resources with colleagues. Teachers worked together after school to deliver 'extra curricular activities' such as sporting activities, music and drama. Teachers also collaborated in devising and sharing resources, and sharing good practice. Shared area teaching was mentioned as a historical form of collaboration as it has now been abandoned as a practice in the Irish primary education system.

Very often teachers recognised each others strengths and divided the teaching roles accordingly. As one teacher stated about the benefits for children and learning, of

using the strengths of each teacher when they swap subjects: "One of my colleagues teaches PE to my class while I teach music to his. I like teaching music and he likes teaching PE. The children benefit because in both subjects they have a teacher who likes what they are doing and if you like what you are doing you do it better."

OPPORTUNITIES FOR COLLABORATION

In the focus groups teachers referred to the various opportunities provided in the system for teachers to meet at times when they are released from classroom duties and when collaboration with colleagues can occur in their schools. These opportunities included staff meetings, inservice professional development days and School Development Planning days.

While each of these opportunities was welcomed by teachers, inservice days were singled out as particularly helpful for building collaborative practice. Teachers lauded the opportunity to collaborate in planning and to share and develop practice provided during the programme to role out the revised curriculum. This was a recurring theme in all of the focus groups. Inservice was seen as a welcome opportunity to come together as a staff for professional development in all of the questions discussed at the various focus groups. The following comments from teachers reflect the opportunities provided by the recent curriculum professional development programme:

> "I think inservice has encouraged collaboration."

> "I find that years ago there was (comparatively) very little collaboration but now with the revised curriculum schools have, through the inservice days, planning time and time to come together to discuss how best to adapt and deliver the curriculum to their unique school community".

> "You know we are quite isolated (in our classrooms) … but in the training for the revised curriculum we got to meet together and with other staffs. It was terrific."

> "Our inservice days…there is planning time and people come together to discuss how they will do, for example subtraction in mathematics."

Many schools are creative in providing for opportunities for collaboration at other times during the normal school day, with some teachers mentioning the provision of release time from classroom duties with cover, co-operative or team teaching, in-class support from a special education teacher and shared classrooms. Schools with infant classes are sometimes able to call on the goodwill of the infant teachers to set up such an opportunity. As one teacher said, "We have a great system in our school because of the generosity of infant teachers. They supervise classes once a week and release the

class teachers for collaborative planning." In other schools the board of management pays for additional substitute teachers to provide roaming cover for teachers. This allows them to consult with teachers in special education and colleagues teaching in the same class grouping. One teacher gave the following opinion in relation to collaboration with teachers from other schools: "I strongly feel that more time should be arranged among teachers in the local area … where teachers could collaborate with other teachers of the same class level".

In many schools the time for collaborative planning and consultation is grabbed at opportune moments during the school day, such as school breaks or consulting with a class teacher in their classroom while the pupils are working. These were not regarded as optimum but were seen as necessary in the absence of other possibilities. Resource teachers especially did not like interrupting a mainstream class teacher during the school day. These occasions were also seen as less than useful as neither teacher could be reasonably expected to be giving his/her full attention to the discussion. The practice of meeting, before the beginning of the school day or after the end of the school day, to plan or to consult with colleagues was mentioned by a significant proportion of teachers. This is an indicator of the generosity of teachers with their time and their concern for the best possible learning outcomes for the children. Teachers who were able to give this time found that it had a very positive effect on their teaching, the range of strategies and resources they used and the learning outcomes for children.

COLLABORATION IN PLANNING AND REVIEW

Collaboration in planning and review was the most frequently mentioned collaboration in the focus groups. It was generally acknowledged as contributing to enhancing the quality of teaching as a more effective way of preparation for teaching. This collaboration, while it did take place prior to the introduction of the revised curriculum, has become even more wide spread since. Another significant factor which has also facilitated more collaboration in schools has been the explosion in the numbers of teachers in schools without a class remit and the significant number of support teachers who visit schools to work with school staffs. Some of these come from the Primary Curriculum Support Service, others from School Development Planning, yet others are DEIS co-ordinators, Special Education advisers or co-ordinators of services for Travellers. The following are some of the collaborative activities that were mentioned by participants.

- Class groupings take the opportunity to plan together.
- Job-share partnerships planning curriculum delivery together.
- Planning together with special education teachers.
- Collaborative planning with cuiditheoirí and teachers in school support services.
- Participating in the IEP process and review of same.
- Engaging in School Development Planning.

- Local or regional cluster groups of principals, teachers in special education, home school community liaison teachers, engaged in professional development, sharing expertise or knowledge and reviewing strategies used in their schools.

Some of the comments of teachers are worth mentioning here. "I job-share. My job-share partner and I have to adapt our different ways of teaching and decide on specific methodologies." Another teacher also part of a job-sharing partnership said, "Children who are taught in a job-sharing situation benefit hugely in lots of ways because they have the best of two teachers." The following is a comment of a teacher on planning in class groupings, "From the day I started teaching class groupings in our school have planned as a team." According to the participants in the focus groups, collaboration in planning is widespread in the Irish primary context, though the challenge of "finding the time for planning and time for meeting" was mentioned by many participants.

CO-TEACHING

There was only one teacher with experience of co-teaching. She described its advantages in this way: "When I was co-teaching I thought it was fantastic, it was good for your confidence." She went on to say that, "It was good because one person could be guiding the class and the other could be going around to help the weaker children." Another teacher talked about teaching in a shared area in Dublin: "I worked for four years in Dublin in a system called shared area teaching… It required an awful lot of organisation and you had to get on well with your teaching partner. It lasted for sixteen years and then they scrapped it." Working together can help develop the skills of less experienced teachers. A teacher described a school she knew where "…young teachers coming out of college had huge discipline problems so they were using co-teaching as a way for experienced teachers to mentor beginning teachers."

The benefits of working with another teacher are highlighted also in the following comments:

> "It is another pair of hands and it is brilliant."

> "I am learning so much by having this person in the room … and I am getting great ideas from her and I know she is learning from me as well."

> "My biggest regret was that I never saw anyone else teaching until three years ago, it was just fabulous to see someone else actually do it."

Co-operative teaching has the benefit of developing professional practice through mutual observation and the interaction of the participants.

CHALLENGES TO COLLABORATION

However, while these comments are typical of the majority of teachers' attitudes to collaboration there were some voices which indicated that the practice is not universally welcomed or widespread in the Irish primary education system. The continued existence of the 'Do Not Disturb' sign in bold print on some classroom doors and inferred on others, was referred to in one of the focus groups. The contrast between openness and the spirit of teamwork of the majority of the schools of today and the professional autonomy of times past was also mentioned. This was a time when teachers were masters of their own classrooms, which they entered at the beginning of the school day, closed the door and kept it closed till the children were released at the end of the day. Professional practice was then personal and private, open to scrutiny only to the Inspectorate and guarded from suspected plagiaristic tendencies and critical commentary of colleagues. One teacher was not sure that schools have changed that much when she pointed out, "…but some people (teachers) see that (sharing practice and classroom space) as almost educational piracy, they don't want you in their classrooms even after school." This was a minority view and the group in question agreed that while there are such teachers in the system, they were few and far between.

Many members of the focus groups mentioned teacher compatibility as a significant factor in developing effective collaboration in teaching. Openness to the ideas of the other teacher and a willingness to adapt or change your own is important. Attitude is also a factor. The following comment is typical of those expressed by teachers when discussing why collaboration doesn't always work and why they might not always be open to participation. "If a class teacher is not comfortable with another adult in the room then it is not going to work." Teachers in the focus groups were also inclined to attribute reluctance or lack of success in collaborative classroom practice to factors of personality and being better able to 'get on' better with some teachers than with others. "I felt that it was very beneficial bringing the resource teacher in (to the mainstream classroom) but that is not to say that I would be comfortable teaching with just anybody." The participants must be compatible. Teachers working co-operatively need to be able to be clear on their individual roles and responsibilities in the shared classroom. It is important to be able to agree on who will take the leadership role, and to agree on learning goals and on expectations in relation to learning outcomes and behaviours.

In small schools the possibilities for collaborative practice are relatively smaller. In pointing this out a teacher articulated the opinion of the group when she said, "It must be hard if you are the only fourth class teacher in a school and have never taught fourth before." The establishment of cluster groupings of teachers with the same class group remit was suggested as a way of facilitating collaborative planning in rural areas.

Accommodation/space in classrooms or more accurately the lack of it was seen as a hindrance to using strategies such as active learning or the discovery approach in

classrooms. It also can prevent co-operative teaching taking place. In already over crowded classrooms there may not be room for another adult to work meaningfully with the class teacher.

Many teachers also pointed out that working together in one classroom with another teacher requires careful preparation and clear role definition. The time for preparation is difficult to find. One teacher who felt particularly strongly that planning is essential for effective collaboration said, "I think it is atrocious to try to work collaboratively without collaborative planning time" As a resource teacher she found her colleagues reluctant to sit beside her at break time because she felt compelled to start discussing the progress of a child in the class that she was also working with. The class teachers wanted and deserved their break uninterrupted. Two other comments illustrate teachers' need for collaborative planning time.

> "Time for collaboration is a huge need in the system."

> "Time was the issue and teachers need time at the start of each term to talk to each other and plan but this time is not there. A quick word grabbed here and there is not a sufficient."

Concluding comment

Many school wide activities which were considered important in the development of positive attitudes and values inherent in the curriculum, could not take place without the co-operation of the many individuals in the school. While teachers who attended the various focus groups were broadly positive towards collaboration with colleagues and were able to discuss various ways in which collaboration enhances teaching and learning in their schools and illustrated this with succinct examples from their own teaching experience, the potential for collaboration and co-operative teaching in its broadest sense and the benefits that could accrue have not yet been fully explored. However, where it does occur, pupils get the benefit of the strengths of two different teachers and their unique approaches to teaching and teachers have the opportunity to share skills and knowledge and to learn and benefit from each other strengths. The dynamic afforded by sharing the teaching role makes reflective practice and the professional development derived from it inevitable. There is a unique opportunity in the coming years, through many of the current initiatives, to make collaborative classroom practice a key element of the Irish education system.

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Part Two

Proceedings of the Consultative Conference on Education

SLIGO

NOVEMBER 2007

Approaches to Teaching in the Irish Primary Classroom

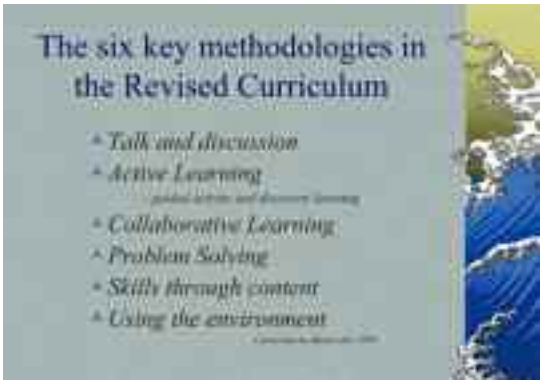
Francis Roche and Rosena Jordan, Education Committee

INTRODUCTION

Francis Roche

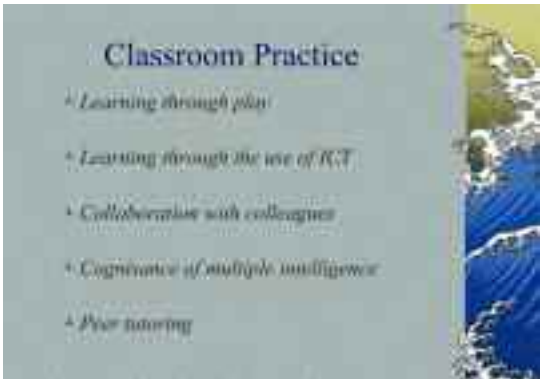
The Education Committee conducted focus group research into pedagogical practice in Irish primary classrooms earlier this year. When deciding on what questions to ask we looked first at the revised curriculum.

The revised curriculum identified these six central methodologies.



We noted that the revised curriculum referred to other strategies that have the potential to support less able children and take cognisance of individual strengths and of how children are intelligent, such as directed teaching, linkage, integration and differentiation.

We noted that approaches to teaching and learning in the Irish context could not be summed up entirely in the terms mentioned so far alone and identified some other key elements of classroom practice.



We looked at the move from individual responsibility for curriculum delivery in the classroom to the collective responsibility of the whole school team for curriculum implementation. With the roll-out of the revised curriculum and the School Development Planning initiative, there are now opportunities for teachers to collaborate with colleagues on planning whole school policy, curriculum and classroom practice.

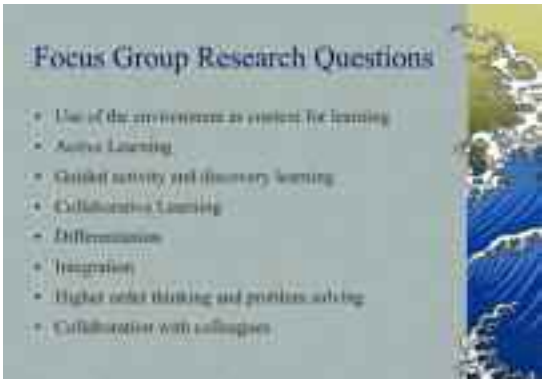
We identified two models of classroom collaboration – co-teaching and co-operative teaching. There were four different strategies within 'co-teaching':

Co-operative teaching differs from 'co-teaching' in that it is whole-school focused. Students work primarily in co-operative learning groups, teachers work in co-operative teams.

The effectiveness of various methodologies is outlined below:

The conclusion that the best way to learn something is to teach it to someone else is a simple one to draw. Perhaps it is a simple truth.

These were the questions we were interested in asking teachers:



We would like to thank everyone who participated in the focus groups. The full list of findings is in our discussion document (Part One of this Report). In this presentation we want to listen to the authentic voice of primary teachers talking pragmatically about some of the strategies they use.

Rosena Jordan

Excuse me there! Can I interrupt you? I have something to say here and I believe it is relevant. I don't know about you but I am just an ordinary classroom teacher and I am feeling a bit overwhelmed by all of these methodologies that go along with this revised curriculum. I can handle 'talk and discussion', 'using the environment' and even problem solving to a degree but 'active learning', collaborative learning and skills through content are just so much more difficult to implement. This is before we refer to 'linkage', 'integration', and 'differentiation'. With the inservice that has been provided since 1999 I finally feel that I know my curriculum content and am familiar with the

strands and strand units of the various subjects. I suppose you could say I know what I should be doing but it is still difficult to do it.

Francis Roche

Tell me more. You know I have not had charge of a class in a primary school this long time. In my present job I don't actually teach children myself but I do get to talk to teachers about teaching and of course I do send out surveys and research questionnaires. I am sure teachers are pleased to hear from me.

Rosena Jordan

Of course we are. Could you doubt it?

Using the environment

Francis Roche

Can I ask you a question? According to the curriculum, the child's environment is an important context for his or her development. What do you think?

Rosena Jordan

Well I use the environment regularly in my teaching. Items in my classroom and places in the school are clearly labelled. In Maths the pupils use concrete materials and solve problems based on issues relevant to themselves. We are working hard trying to earn a green flag for our school by reducing litter and promoting environmentally friendly initiatives such as recycling, composting and planting. We go on nature walks within the school grounds. This used to be a large area but because of increasing pupil numbers, extra accommodation in pre-fab units has significantly reduced our green space. I find it especially challenging to control behaviour and guide the learning of my pupils when outside the classroom doing maths, science or geography work in the

yard or green areas. It would be easier to do if I had smaller numbers or another teacher with me. I certainly would not contemplate walking downtown with them as the roads are too busy. We travel by bus to the nearest swimming pool, where the children pay for aquatics – which is becoming more expensive each year due to ever increasing bus charges.

Active learning

Francis Roche

So I gather. Tell me about active learning in your classroom. We believe that there are better outcomes for children when they are active agents in their own learning and the curriculum is designed to provide opportunities for active engagement in a wide range of learning experiences. Have teachers embraced active learning approaches in their classrooms? What is your experience?

Rosena Jordan

In our infant classes children are physically active as they jump and dance while saying rhymes or playing counting games. Children respond to poetry in small groups using sound effects or 'freeze frame'. I have found that this really motivates pupils to learn some poetry. Boys and girls are equally encouraged to take control and make decisions for the group. I also find that if children discover something for themselves they retain it far better than if somebody tells them. In maths classes children estimate how many lollipops sticks long the table and other items are and then they measure them. Mind you I have found that some children feel that their estimate must always be the same as the answer and are ingenious at ensuring that this always happens much to the annoyance of some of their classmates.

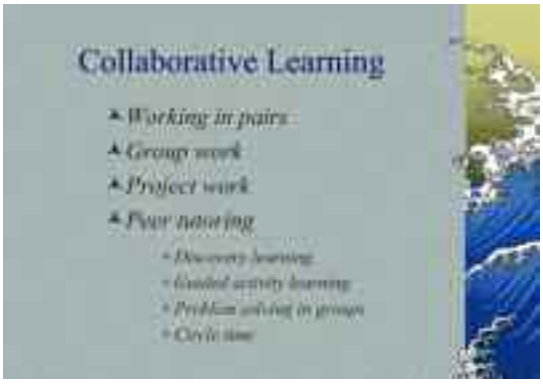
Francis Roche

What would be the barriers to creating active learning opportunities for children in your classroom?

Rosena Jordan

Well in my class of 30 pupils it is really difficult to find time and space to set up equipment for science experiments. Putting equipment away carefully, finding suitable space to store it for when it will be needed again is another hassle. I need new maths and science equipment for my class but the Board has insufficient funds so I will have to wait or come up with some new and innovative fundraising ideas.

Collaborative learning



Francis Roche

What can be said about 'active learning' strategies is also true of learning in co-operative groups with the added social dimension of sharing the learning tasks. Working together, children learn from each other and are stimulated by hearing the ideas and opinions of others. Also, group work is ideal for exploring attitudes and values as well as while providing opportunities for sharing knowledge, developing skills and language. So I was wondering how does group-work work for you in your classroom?

Rosena Jordan

I do agree that children learn better in collaborative settings, however before children collaborate to learn they must be taught how to collaborate. Many children nowadays come from small family units, are used to being the centre of attention and are not accustomed to working co-operatively. Learning to collaborate begins in junior infants and the skills develop from year to year. Collaboration is an essential life skill which some children learn more readily than others. In my opinion collaborative learning requires careful planning and preparation which is time consuming. Ground rules have to be set otherwise children will not stay on task. Roles have to be assigned

within each group – otherwise the dominant child will take over everything with the result that the quiet child will get bored and learn nothing. I find that group work increases self-confidence for each child; they become more tolerant of each other; they are more patient as they realise that each have to wait their turn. Children learn a lot from each other and have a knack of explaining things to a weaker child in a way that the child easily grasps. The ground rules for group work such as actively listening and showing that you are really listening by looking at the person who is speaking while waiting your turn to speak also apply in circle time.

Fostering higher-order thinking and problem-solving skills

Francis Roche

The curriculum identifies 'summarising, analysing, making inferences and deductions, and interpreting figurative language and imagery' as higher order thinking skills. Activities that foster these skills are observation, collation and evaluation of evidence, asking relevant questions, identifying essential information, recognising the essence of a problem, suggesting solutions, and making informed judgements.

There are other higher order thinking skills too, such as the capacity to reflect on how we learn; working with knowledge and skills to create something new; expressing empathy; articulating persuasive argument and the capacity to adapt to changing circumstances.

Encouraging higher order thinking has been identified as an area of weakness in the Irish education system. What do you think?

Rosena Jordan

Well in my classroom time is always of the essence. It is very difficult to get around to every subject and cover each strand well and in-depth. By the time I have covered the content associated with a particular strand unit, the time set aside for that subject is often up and there is little time left to work with the content at a higher level. I do remember saying this at inservice seminars since 1999 and the facilitators did acknowledge 'curriculum overload' and pointed to the built in discretionary time and a thematic or cross-curricular approach as a way to address this problem. This was useful advice but this discretionary time cannot be appropriated by each subject every week and I find I need that time to catch up on the core subjects of English and Mathematics. I think that higher order thinking skills and problem solving abilities depend on language, and many children, as we mentioned already, come to school with low levels of oral language. It is difficult to prioritise higher order thinking skills when a basic language programme is required.

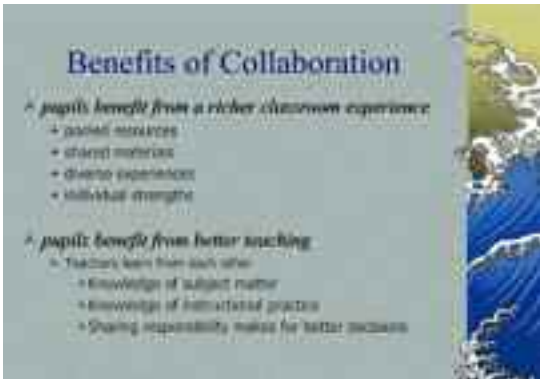
However, it is rewarding when the children engage in higher order thinking and

debate alternate views. It is particularly interesting to observe prejudice being challenged effectively. The key I find to promoting higher order thinking skills in my classroom is incisive questioning. It took me many years of practice to learn how and when to ask the open question that would stimulate discussion. It helps that my class were used to 'circle time'. They were, for the most part, able to listen actively to alternate views and they readily accept the possibility of multiple correct answers.

I do feel that if I had less children in my class I would be able to achieve more.

Collaboration with colleagues

Francis Roche



There are more opportunities for collaboration with our colleagues now than ever before. The roll-out of the revised curriculum brought teaching staffs together for in-service professional development for the first time. The growth in the number of teachers who do not have responsibility for a mainstream class has also provided new potential for in-class collaboration. There appears to be a shift from the individual accountability of the class teacher to collective responsibility for whole school planning, curriculum delivery and policy development and implementation. Teachers welcome opportunities to reflect on their own classroom practices with colleagues and to hear from other teachers what works well in their classrooms. Do you see more collaboration among teachers in your school?

Rosena Jordan

I agree entirely that teachers are collaborating more since the introduction of the revised curriculum than ever before. We share ideas and resources with one another. I feel that sharing problems, swapping ideas and offering assistance to each other greatly enhances our teaching. I strongly feel that opportunities should be arranged for teachers in the local areas to meet with other teachers of the same class level. Cluster groups

for teachers in special education have been meeting successfully, why not teachers of infant classes? Effectively meeting the educational needs of children with learning difficulties requires huge collaboration. The resource teacher comes into my class for maths two days a week. He is able to help a pupil or group that might be having difficulty. He is very flexible and that is brilliant. It works really well.

However, the time to prepare for collaboration is difficult to find. There really needs to be structured time within the school timetable for this collaboration. At the moment it is all done on an ad-hoc basis and this is most unsatisfactory. I am grateful for the generosity of the teachers of infant classes who give up an hour of their time every month in my school so that I can plan collaboratively with my colleagues teaching the same class level. It is my hope that the DES will provide more time for me to collaborate with my colleagues.

Francis Roche

Is there resistance to collaboration among some teachers do you think?

Rosena Jordan

Some teachers are not as open to working co-operatively as others I suppose. The 'Do Not Disturb' sign in bold print is still on some classroom doors and is inferred on others but this is only in a small minority of cases. If a class teacher is not comfortable with another adult in the room then it is not going to work. The compatibility of the personalities of the teachers working together is very important. This applies to job sharing too. I used to job share and my job share partner and I had to adapt our different ways of teaching and decide on specific methodologies. Children who are taught in a job-sharing situation benefit hugely and in lots of ways because they have the advantage of the strengths of each teacher.

ICT

Francis Roche

What about ICT? Does ICT enhance teaching and learning in your school?

Rosena Jordan

In a word, yes. Computers have proven to be a very useful learning tool. I know that the teachers involved in special education in our school use ICT regularly with the children they teach. Children with learning difficulties can present their work to a very high standard with the help of ICT.

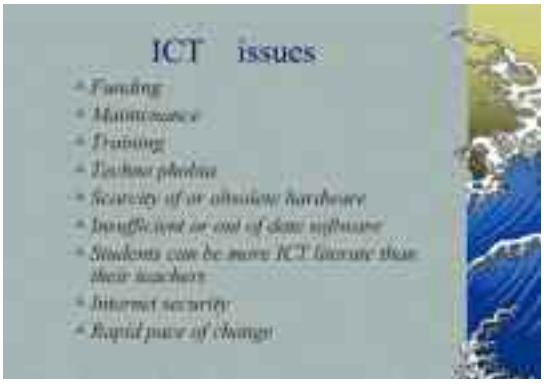
Francis Roche

Computers are increasingly a part of leisure time pursuits for children. This can mean that in many cases pupils are more computer savvy than their teachers at primary level. What do you think this will mean for primary schools?

Rosena Jordan

It is certainly a challenge for ICT in schools to remain relevant as technology advances ever more rapidly.

There are many reasons why schools do not realise the full potential of ICT. The government did provide funding to network our primary schools and connect each classroom via broadband to the internet. The same commitment to providing hardware, software and technical support has not been forthcoming. It is really like building a six-lane super motorway system around the country to be used by bicycles.



Conclusion

Francis Roche

I am sure your experience is shared by many others here today. Talking here to you has been an eye-opener for me. We have only been able to skim the surface of some of the approaches to teaching in Irish primary schools. I hope that what we have said will spark many a conversation in the discussion groups that will follow this presentation.

The Social Turn in Learning: Implications for Teaching in Primary Classrooms

Dr Paul Conway, Education Department, University College Cork (UCC)

INTRODUCTION

I am delighted to be back at an INTO Education Conference. I participated in two of these conferences in the early 1990s as a member of Dublin West Branch. The brief for me today is to talk about approaches to learning, and I will also talk about the teaching side of classroom life.

The title may sound rather ambitious: 'The social turn in learning' – what is all that about? I suppose one of the big differences between the 1971 and 1999 primary curricula was that, as some speakers have already mentioned, there was much more emphasis on collaborative learning in the 1999 curriculum. One of the issues that I was thinking about in the context of this annual conference's theme is that there are lots of different types of interactions in the classroom between teachers and students. Which of those interactions have the most beneficial impact?

There is a variety of reasons to take seriously the inter-related ideas of quality teaching and quality learning. You will be very familiar with these: the knowledge society challenge, the new directions in the 1999 curriculum, and also, I think, there have been very significant developments in what we know about learning now compared with what we knew forty years ago when the 1971 primary curriculum was written. There is now a plethora of work in the areas of neuroscience and cognitive psychology, and there is a lot of work in anthropology. Looking at how people learn out of school is sometimes especially helpful if you are trying to understand how they learn in school. The social turn in learning is really trying to think about teaching as going beyond bowling alone, that is, beyond thinking of learning as something done by learners alone or in isolation from others. Historically, as the President mentioned, in the past

there was an emphasis on the individual learner and the teacher delivering whatever had to be delivered. What I will do in this presentation is highlight a few ideas that may be useful in enhancing the implementation of the ambitious 1999 *Revised Primary School Curriculum* (DES, 1999) and more recent assessment guidelines for primary schools (NCCA, 2007).

Are all type of classroom interactions equally effective in promoting student learning?

The two ideas I want to look at are the notion of a cognitive apprenticeship and fostering communities of learners. These are intertwined and I will elaborate them further. The other issue I want to focus on is the notion of quality feedback. There are lots of different types of feedback and there has been some fascinating research in the last five or six years on the impact of different types of feedback. The key perspective that I am going to take today has its roots in ideas that go back a long time: as Bacon wrote, "Neither the hand nor the mind alone would amount to much without tools to perfect them."[4] So what are those tools that we are talking about? Language, the various different symbols we use, the technology that we have already heard mentioned – all of these tools in a sense amplify the mind, give the mind new ways of doing things and stretch the mind. But it is not only tools, it is also people. People also stretch the mind. When a two-year-old asks his or her mother or father where her teddy bear is, in a sense the child is asking the adult to help her think out loud. These sorts of relationships are the very basis for learning, and the extensions of them are the basis of productive learning conversations that can occur in classrooms.

Are all types of classroom interaction equally effective in promoting learning? Which types of interactions have the most impact on learning? The answer to the first question is – no! So, which types of interactions best support student learning? Recent research on 'feedback' to learners from teachers is helpful in addressing this issue. The review study[5] examined the impact of different types of feedback in the classroom based on summaries of hundreds of different studies involving 30 to 40 million students over the last thirty years. The biggest and highest impact on student learning is cues; next is positive reinforcement. Now look what is at the bottom – praise and punishment! People are going to say, hang on a second, that is hugely surprising – are we saying that praise is not important? No. Praise is essential but by itself it is not sufficient and typically what is meant by praise in this context is praise in the sense of "Well done", "Good boy", "Good girl", "I like that". That praise is important but insufficient. Why is it insufficient? It's insufficient because most classroom praise leaves out two key pieces of information and direction. Information here refers to the teacher

4 Sir Francis Bacon, *Novum Organum* (1620)

5 Hattie and Timperley (2007) The power of feedback, *Review of Educational Research*, 77.

communicating to learners why what they have done is good, excellent…etc. Direction refers to 'next steps' a learner needs to take. In summary, 'good' classroom praise and feedback to learners has to have affirmation, information and direction.[6] I use that example by way of making the point that when we talk about the collaborative classroom and the interactive classroom, different types of interaction have different effects. And different combinations of different types of interaction have different effects.

Learning as social, situated and strategic

I think there are three key ideas in terms of thinking about learning if we take seriously the notion of interaction and collaboration which is at the very heart of the 1999 curriculum. The first is that learning is *social;* second, it is *situated;* and third, it is *strategic.* I am going to spend a few minutes talking about what each of them means. So what does it mean to say that learning is 'social'? Many of you are familiar with sociocultural theory or Vygotskyian theory. Piaget and Vygotsky are often seen as quiet different: Piaget tended to emphasise the learner as a lone scientist whereas Vygotsky (1978) tended to emphasise that learning is something that occurs in society; his main book is called *Mind in Society.* The title is very telling. It is about how society in a sense shapes the mind, and technology is a wonderful example: we create tools which in turn shape our minds. So it is a cultural explanation as to how learning occurs (Brown, 1994; Bruner, 1996; Claxton and Wells, 2002; Collins, 2006; Prawat, 1992; Wenger, 1998). As is evident in lots of different ways, learning is social, not just in the interpersonal sense but also through the symbolic tools and actual physical tools of society, such as technology (Claxton and Wells, 2002; Lei, Conway and Zhao, 2008).

So how is learning 'situated'? One wonderful example is a powerful piece of work undertaken by Nunes and others (1993) in Brazil where they interviewed children on the street who were buying and selling, bartering on the streets in San Paolo. When the very same children appeared in school they scored very poorly in tests of subtraction, addition and multiplication, and yet they were able to do the exact same algorithms on the streets. It is very interesting work, and points to the fact that the social context, the situation in which learning occurs has a profound affect on whether children appear competent or not. It is a real challenge when we ask ourselves questions about the ability that we think kids have or don't have. In a similar vein, there have been many other very interesting distinctions made between learning in school and learning out of school (Resnick, 1987). Learning in school is typically done by individuals, mentally focused, abstract, focused on symbols, and occurs with relatively limited social support. On the other hand, learning out of school tends to be active,

6 See for example Black et al (2004) Working inside the black box: Assessment for learning in the classroom, *Phi Delta Kappan,* 86.

practical, involves social activities and uses tools, and in particular there is a lot more social support in out-of-schools settings. These differences between learning in and out of school challenge us to think about how school learning might be designed in such a way as to bring some of the best features of in and out of school learning to design classroom life for the knowledge society.

So to the third 'S': how is learning strategic? There was some fascinating research in the 1970s and 1980s which looked at the impact of cognitive strategies. What is a cognitive strategy? A very quick example: if you ask good readers what they do to understand text they will tell you that they do things like read over the paragraph, summarize and try to predict what is coming in the next paragraph. Poor readers tend not to do that. You can teach kids those cognitive strategies: clarifying, summarizing, predicting, asking questions. These are powerful teachable strategies, even for the weakest pupils. A very important idea coming out of socio-cultural theory was that even the weakest students in the lowest of classes can benefit from cognitive strategy instruction. It is implicit in the 1999 *Revised Curriculum,* but I don't think it has been elaborated sufficiently for it to gain a foothold (Conway, 2002).

Fostering a community of learners (FCL)

I would like to draw your attention to the landmark work of a woman called Ann Brown (1992, 1994), an English psychologist who started off in a behavioural tradition but ended up working in the Vygotskyian tradition. She died in 1999 and most of her work was done with her husband Joe Campione (Brown and Campione, 1994) in what she calls the 'blooming buzzing confusion' of inner city of Los Angeles classrooms. It is very powerful and compelling work and uses the strategy of fostering a community of learners (FCL), which is underpinned by four ideas: that learning is active and strategic; that classrooms support multiple zones of proximal development; that classrooms support and build on learners' individual differences; and an emphasis on a community of discourse (Brown, 1994). For example, the emphasis on creating a community of discourse means supporting and actively planning for different ways of talking in the classroom, asking students to express their ideas, engage with each other, throw out conjectures, search for evidence, prove the points that have been made in science, or assertions they have made in history, using primary and secondary sources to bolster their arguments – which if they are taught and structured coherently can have a powerful impact on student learning. The fifth and final idea is the notion of a community of practice. It is a widely used phrase now, and sometimes over-used, but it emphasises the importance of belonging and identity – that students learn more than content; they learn a sense of self and a sense of who they are in classrooms. For example, there was a very informative project at the US Centre for Improvement of Early Reading Achievement (CIERA: www.ciera.org) which I was

fortunate enough to work at for a while at Michigan State University, and it provides one example of how a community of practice-based learning support intervention can make a difference. One child when he was assessed in September only wrote one sentence in the writing task: "I am stoppit." Translation: I am stupid. Six months later he wrote a paragraph talking about how he felt a part of the community in the classroom and was now a reader; he actually said, "I can read." Now that intervention over six months was rooted in a community of learners approach, so rather than one-to-one intervention it was actually group intervention with twenty students in a resource room. It was very effective, as not only did he improve his score on conventional reading tests but he also changed his sense of self as a reader.

Cognitive apprenticeship

I think an awful lot of the work that was mentioned here earlier today would fit very well with the community of learners approach – for instance, group work, classroom discussion, using questions, the development of the ownership of learning through cognitive apprenticeship (Collins et al, 1989; Collins, 2006). The key idea in cognitive apprenticeship is enculturating children into powerful ways of thinking in reading and writing through modeling, coaching and fading. It is very helpful as it gets away from thinking about the teacher as either a transmitter or as a facilitator, and says, look, good teachers need to be directive, good teachers need to facilitate, and good teachers at times need to fade out of the way and let kids get on with the learning. And so modeling, coaching and fading provides a fairly rounded perspective on what a lot of – or probably all – teachers know makes for a good teaching repertoire: to be able to model strategies, to be able to coach kids to help them to internalise those strategies in their ways of thinking, and then to move away so that kids can take ownership of the various strategies over time.

Now for two examples of cognitive strategies, one in reading and one in writing. Again you can Google these and find out more information: 'reciprocal teaching', of which I gave an example a few minutes ago, is a package of thinking strategies that has been shown to have a very strong impact on student literacy learning from junior infants right up to 12th grade – or the end of secondary school – in about ten or fifteen countries. There have been fifteen or twenty years' work done on it and, in terms of the various types of feedback we were looking at, it has a very powerful impact on learning, consistent with what was in that top circle. Students who are in reciprocal teaching orientated classrooms will gain six months compared to students who are not, according to reading comprehension scores. There is quite a significant impact after the use of reciprocal teaching over the course of just one year.

Cognitive strategies in writing (CSIW)

If I were to describe CSIW as planning, organising, writing, editing and revising, somebody might say that it is just process writing. It is in a sense process writing, **plus.** What do I mean by 'plus'? It is actually a little more directive at the beginning that is, the modeling part. What does it mean for teachers to model? Many kids who struggle at reading and writing don't actually understand the cognitive process that good writers go through. A few years ago, I evaluated a pilot laptops initiative for the NCTE and we visited and spoke with teachers and students in a number of participating schools, and in one classroom the teacher invited a local author in to share his perspective on what it means to be a good writer. When we interviewed the students in the classroom they were very surprised that good writers struggle and plan. Lots of kids see writing as knowledge dumping, and then if they get tired they just write 'The End'! You've seen that, right? In a sense they have short-circuited the whole writing process. So cognitive strategies in writing are much more directed initially, but in the end, because the students can see how good writers think about writing they hopefully take ownership, teachers have a much better opportunity to step back and allow kids to flower and blossom.

Conclusion

There has been a social turn in approaches to learning. It is evident in the conversation here and particularly in the duo which preceded my presentation. I think there is a much better sense now of the importance of interaction in the classroom and in the presentation today I wanted to raise a question that I think is worth asking: Are all types of interaction equally beneficial for learners? I hope my presentation will have pointed out that different types of interaction have different consequences for what students learn and how they learn, but also for how they think about themselves as learners. Ultimately, especially in the context of a lifelong learning society which will be part of the knowledge society, that sense of being a continuous learner is probably central, and is one of the key legacies which we want to leave with each generation as it moves on to post-primary school and into the wider society.

The first point that I want to draw your attention to is that there are lots of different approaches to thinking about learning. There is a lot of research on so called 'brain-based approaches to learning'. Recent summaries of the brain-based approach in the last decade have made one major point – that it is a *bridge too far* to go from what we know about cognitive neuroscience to classroom practice. Much of this recent research is based on functional magnetic resonance imaging (fMRI) studies assessing the brain of adults engaged in various tasks. This research is interesting but does not easily lend itself to prescriptions about classroom practice. As such, even if we did know exactly how students' brains acted during different types of activities, it is a far

cry to suggest that we would then know exactly what to do in the classroom (Bruer, 1997). So the approach I present today is one that emphasises cognitive and socio-cultural approaches to learning, as they have a lot more to say about understanding and enhancing teaching and learning in classrooms, than so called 'brain-based approaches to learning'.

In the way I have talked about socio-cultural approaches to learning I have emphasised its structure, its strategy and its situation. Robert Putnam, whose book (1995) on social capital, talks about the decline in volunteering across many societies because people are busy or spending more time traveling to work, working and engaging in more solitary activities. In summary, he uses the term 'bowling alone' to characterise the way we live today. He then talks about the way societies used to be in the past when there was a lot more emphasis on bridging and bonding. This is community participation, whether in Southern Italy where he undertook some of his research or in various cities in the US. But the emphasis on collaboration and learning that we are talking about now is trying to involve bridging and bonding in the classroom in ways that might not have happened in the past. So, while communities in the past may have had a lot of people working together, classrooms actually had children bowling alone. And yes, of course we want children to be able to bowl alone, but also to be able to bridge and bond as learners in the classroom.

And finally, a point that is increasingly prominent in educational policy debates but is worth reiterating: the single most influential school factor impacting children's learning is the quality of teaching they experience. So, I think the focus on approaches to teaching and learning is worthwhile and I would like to thank the Education Committee for the opportunity to talk to you this afternoon. It is great to be back at an INTO Education Conference.

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Approaches to Teaching and Learning

Collation of Discussion Group Reports

INTRODUCTION

All delegates to the conference were allocated to discussion groups to consider the issues raised in the background report on *Approaches to Teaching* and those raised in the presentations. The discussion groups were facilitated by members of the INTO Education Committee. The reports of the discussions were collated and are presented below.

1. The environment

It was generally accepted in all groups that the use of the environment was a vital resource for the teacher and very important as the primary context for learning. Teachers reported that they use the environment to support most areas of the curriculum. In particular teachers mentioned the curricular areas of Language, Maths, History, Geography, Nature, Science and Visual Arts. In these subject areas strand units and themes which were particularly singled out included:

gardening	weather	seasons	trees
plant life	insects	birds	animals
recycling	composting	mapping	directions
drawing	painting	craft work	work
play	seashore	rivers	

The use of trails around the school environment was often mentioned. Trails were most often used in Mathematics, Geography, language teaching, Social, Personal and Health Education (SPHE) and the natural world/environmental elements of Social, Environmental and Scientific Education (SESE). In mathematics the local environment was regarded as particularly useful in the strands of measure – length and area – and data representation.

Teachers often visited beaches, parks, museums and galleries as well as local and regional history sites. Within the school grounds many maintain a school garden. The 'Green Flag for Schools' initiative was welcomed as a whole school approach to support the SESE curriculum and to inculcate respect for the classroom, school, local environment and the wider world from an early age.

There were problems associated with leaving the classroom. These included the need for additional supervision, health and safety concerns and insurance/litigation worries. Teachers with experience of large classes were particularly vocal here. Class teachers of children with special educational needs agreed. The increasing cost of transport was a factor also often mentioned.

Visits to urban settings were regarded as more dangerous and stressful. This was a particular problem for teachers in busy urban areas who felt more confined as a result. Many urban areas in places of socio-economic disadvantage have particular difficulty with health and safety considerations. Vandalism can make not only trips into the local community environment hazardous but also may in some cases create dangers in the school grounds. Other schools in urban settings are space poor.

An alternative to making the wider world the classroom is to bring the wider world into the classroom through the use of Information and Communication Technology (ICT). Interactive whiteboards and the World Wide Web have the potential to bring the natural and man made environments of near and far-flung places to life in the classroom. ICT was regarded as a useful tool in this regard but only as a poor alternative to hands on, out in the world experience. Visual displays no matter how attractive cannot be as beneficial to children's learning as direct interaction with their environment.

A few teachers admitted to not knowing plant names or insect species for nature trails in the local area. Some suggested that collaboration with other teachers or personnel on staff might help address knowledge gaps and the need for additional supervision. Parents as additional adults on trips were also mentioned. However, many teachers reported that parents were less and less available to go on trips and also there could be difficulty vetting parent volunteers for trips away from school. On the other hand, many teachers also reported particularly good learning experiences for children generated by visits to the classroom by local people with particular relevant expertise.

All teachers agreed that leaving the classroom required a high level of planning before hand. There were additional work demands in curriculum delivery outside the

classroom. However, it was also agreed that it was worth it for the learning outcomes and the positive learning experience for the children. Teachers also believed that there should be public debate on whether or not we really believe that children should be active learners exploring their local environment or whether we believe that children should be locked away from exposure to a small degree of controlled, theoretical risk in the outside world during the school day.

2. Active learning

Teachers were in general agreement that the active involvement of children in their own learning was highly advantageous. The consensus also was that teachers are using active learning methodologies increasingly in their teaching, particularly in infant classrooms, where children of this age are naturally more active in their learning styles. Teachers reported the widespread use of concrete materials in the mediation of the Maths curriculum. Station teaching – where Maths or Science activities are spread around at *'stations'* in the classroom and children spend a short time engaged at each station and then move on to the next station – is used by many teachers in primary schools throughout the country, according to the delegates.

Science, History and Geography are particularly suitable for project or group based work and discovery learning. Using scientific methodologies, gathering information from artefacts or primary sources, classification by attribute, inferring from evidence and research are learning activities easily enhanced by collaboration. Active learning opportunities were also easily identifiable in Art and Drama. Many teachers used *'role play'* as a strategy across the curriculum. The importance of children being enabled to question and respond to each other in pair work and during *'talk and discussion'* cannot be underestimated particularly when they are guided by a teacher skilled in this area. Teachers in senior classes referred to use of the *'novel'* in English, where children were allowed to choose the novel to be studied by the whole class. Teachers introduce excerpts/summaries from a few novels, which children read in class. The class is then facilitated to discuss and make decisions on which novel the whole class might study. This is but one example of democratic processes in action in the primary school and where children are given an active role in curriculum selection.

In multi-grade classes, the senior pupils very often model and support the more junior pupils and, in so doing, they consolidate their own learning. Other models of peer tutoring, such as the placement of weaker pupils with brighter pupils, were referred to also. Peer tutoring was also seen as very helpful to newcomer children. The materials and methods used with special needs children encourage activity and interactivity. This is especially the case with the use of ICT in the learning support classroom.

The development of independence in the learning process, the enhancement of debating skills and oral language fluency and the development of skills necessary for

effective collaboration in co-operative teams were among the reported benefits of using active learning strategies. It was stated, however, that activity-based learning needs to be well planned, carefully organised and implemented with flexibility, especially in multi-class situations.

Teachers raised some concerns around the use of active learning strategies in their classrooms. They highlighted the importance of laying ground rules, putting a structure in place, defining and rotating roles in group work and clarifying learning objectives if active learning strategies are to be effective. Teachers stressed the need for pupils to have learned the skills necessary for collaboration, such as being able to actively listen to the other members of their work group and to wait and take their turn – skills that cannot be taken for granted.

General concern was expressed that workbooks inhibit active learning and that they should be replaced with teacher-designed tasks. It was recommended that workbooks should be used as a resource, to allow for more differentiation. However, many teachers stressed that workbooks were necessary in multi-grade classes. Issues around photocopying costs and extra time for preparation were also raised.

Delegates were also of the view that older buildings and large class sizes militated against effective implementation of active learning strategies. The quality and prevalence of activity learning in classrooms is largely dependent on class size, class groups, availability of adequate space and materials and the limitations of multi-grade situations. Teachers with large classes of thirty or more were likely to find such exercises challenging.

3. Guided discovery and discovery learning

Teachers were in general agreement about the effectiveness and success of discovery learning. However, it was stressed that discovery learning at infant level, needs to be very structured and specific in its approaches to teaching and learning. Discovery learning was seen as most successful and in greater use in Nature, Science, Maths, English, Art, SPHE and in project work. Presentation of findings and discussion were also seen as important elements of the learning process.

Delegates agreed that guidance comes first and discovery follows on, in that children need to be trained in the same basic skills that apply to active learning and collaborative learning. In particular children need to be able to work together, to listen and hear what others have to say and to summarise and report back their findings. They also need to be able to extract relevant information while disregarding what is unimportant to their current investigation. The importance of a high level of organisation and availability was also highlighted. The DES was criticised for its failure to provide sufficient grants and the call for greater resources to encourage discovery learning was unanimous. One teacher summed up planning for discovery learning in the acronym

FISH, F is for first impression; I for investigative work; S for stimulation of a response to what was discovered; H for how have I learned?

4. Collaborative and co-operative learning

Participants believed that quite a lot of collaborative learning was taking place in classrooms and cited examples of Paired Reading, project work, and orienteering. It was generally agreed that collaborative and co-operative learning benefits pupils by improving their social skills and helping them to respect the views of others. It also provided an opportunity for children to share their particular gifts, thereby enhancing their self-esteem. This was seen as especially important for academically less-able pupils who might have strengths in other areas.

The challenges perceived by the group were that teachers have to be well-prepared and plan adequately and that care must be taken that more confident pupils do not overwhelm others. Once again, the issue of class size was raised as a deterrent.

5. Differentiation

Teachers generally believed that differentiation was a valuable strategy in the mediation of the curriculum to both exceptionally able and less able students. They commented, however, that the needs of gifted children were more likely to be neglected in favour of catering for the less able. The fear was expressed by one teacher that failure to address the needs of more able children in existing schools , may result in private schools being set up to cater for the gifted children of more affluent parents. It was also pointed out that learning support time could be reasonably allocated to address the educational needs of gifted children.

Effective differentiation requires careful planning and structuring of work. There are also significant resource implications in the provision of a wide range of learning materials to cater for the various different levels of learning ability and learning styles in one classroom. Differentiation will also necessitate the use of a wide range of teaching methodologies within a lesson to teach to individual strengths.

6. Integration

There was unanimous agreement among teachers that integration was working successfully in the revised curriculum. One teacher commented that it "is a fantastic curriculum" which allows for integration and for adaptation to the needs of a particular school, class or individual student. It was seen as a strength that it was a menu curriculum and that it was not prescriptive. Cross-curricular integration or the thematic approach allows the teacher to cover more content in less time thus reducing

the burden of curriculum overload. In fact integration allows the teacher to achieve the impossible, to give the children access to the broad curriculum and all its subject areas. Teachers have the freedom to choose a theme and cover that theme in a cross section of subjects. An integrated approach can however blur the distinctions between the knowledge areas in each subject. The child may not know which subject area is being covered at any one time. While these distinctions may not be so important in the junior classes, teachers did believe that as the children enter the middle standards, approach the senior cycle and are preparing to transfer to second level these distinctions should be kept explicit. However, it was also stated that this should not be at the expense of their appreciation of the inter-connectedness of knowledge and ideas.

Teachers expressed the view that more attention should be given to the curriculum objectives and less to textbooks and that teachers should not feel restrained by 'textbook tyranny'. Parents do pay for school-books and their expectations often put pressure on teachers to complete them from cover to cover. In larger schools parental pressure can put pressure on teachers to be teaching the same strand units at the same time, or be on the same page in the same book, as their colleagues at the same class level. Teachers need to have the professional freedom to go with what interests their group at times. They need to be allowed to take advantage of learning opportunities that arise in their individual and socially dynamic classrooms.

Teachers did suggest that some subjects were more easily integrated than others and that some subjects lend themselves to integration with other compatible subjects. Oral language was seen as easily integrated with Science and Maths. SESE was regarded as a group of subjects that should be integrated with others as much as possible. One delegate said that integration is vital where she teaches in a scoil lán-Ghaeilge because the children need to think and speak 'as Gaeilge'.

There are challenges in planning for integration. Topics need to be chosen carefully. Teachers need to get away from the idea of having something written at the end of each lesson. Learning outcomes do not always need to be recorded in written tasks. It was felt that integration is sometimes under-recorded in 'Cuntaisí Míosúla' and it was suggested that teachers could more easily record what they have covered on a day-to-day basis.

7. Higher-order thinking skills and problem-solving strategies

Teachers were in general agreement that higher-order thinking skills and problem-solving strategies were increasingly important in the information age. The emphasis on the acquisition of knowledge must yield, in the modern age where factual information is easily accessible, to a greater emphasis on working with that knowledge, to apply it in new situations, generate new thinking and creative solutions to real world social, scientific and economic problems. However this endorsement of the value of higher-order thinking skills is not always reflected in classroom practice. Teachers

viewed the revised curriculum as overloaded and content-driven. The content requirements of the revised curriculum, while not prescriptive, are sufficiently burdensome and time consuming as to leave little time for higher-order skills and problem-solving activities. The perception that these skills ought to be taught separately after content was widespread but not generally accepted. Many teachers believed that these skills could and should be taught in an integrated way and not as an extra add on. Many teachers felt ill equipped to foster higher-order thinking skills. Some teachers also referred to the interest level of their pupil cohorts as militating against the use of problem-solving activities and those requiring higher-order thinking especially in the senior classes – the implication being that the revised curriculum has not yet been effective in creating a generation of children who embrace learning for its own value and are self-motivated learners.

The challenges faced by teachers were mentioned far more frequently than were examples of effective teaching of higher-order thinking and problem-solving skills. This may be because the challenges to the classroom teacher are considerable. In addition to those already mentioned, other challenges identified were planning for the effective participation of children whose oral language skills were poor and for those children whose first language is not English. According to teachers, many pupils are getting little or no experience of problem-solving outside of school and expect to be passive receivers of knowledge content. Pupils today are considered to be generally less compliant and co-operative than they were formerly. The inclusion of pupils with special needs generates specific constraints. The role of class size cannot be overemphasised along with problems posed by composite classes and those with very wide ability ranges. Teachers of senior classes also referred to pressures associated with transition to post primary school. Teachers were wary of seeming to disadvantage their 6th class pupils by spending less time on formal English and Maths, with some coming under pressure to increase the time spent on English and Maths.

However, teachers also identified good practice when they referred to 'Multiple Intelligences Projects' which lend themselves to the development of higher order thinking skills. Teachers also spoke about discussions with children on how they learn and on identifying their learning strengths or individual intelligences. Similarly teachers mentioned their efforts to develop in their children an awareness of the learning process.

8. Collaboration with colleagues

Teachers were enthusiastic in their welcome for the opportunities for collaboration in planning and curriculum implementation as well as opportunities to share good practices and expertise afforded them during the implementation period of the revised curriculum and through School Development Planning (SDP). Teachers agreed that collaboration was essential to good teaching practice and that collaboration was a

significant feature of the Irish primary school system. Teachers are increasingly more willing and able to learn from their colleagues, to share ideas and materials and to consult with each other. The day of the isolated teacher, alone in the classroom is fast becoming a thing of the past, as teaching is becoming more and more a team effort, irrespective of the size of school. School teams have collective responsibility for curriculum implementation. The primary school curriculum demands collaboration and whole school planning due to the broad nature of the curriculum, and the need to tailor its implementation to the needs of the school and the children.

The 'shared area teaching' of the 70s and 80s was discussed. Teachers who participated in these schemes reported that it did not work because it was too restrictive and it was imposed without inservice. Teachers felt that collaborative teaching, on the other hand, was voluntary and not restricted by a prescriptive timetable. There was also a view that collaborative teaching had the potential to be more effective and that children benefit from the combined strengths and expertise of the collaborating teachers.

Teachers welcomed the presence of another teacher in the classroom for the most part. It was agreed that it was very beneficial for teachers to communicate with each other and bounce ideas off each other. Some members of the group had experience of using a student teacher to co-teach with and found this very beneficial to both teacher and pupils. Others reported effective collaboration with classroom assistants and SNAs[7]. There was plenty of experience of 'collaboration', whereby teachers shared classes so that those teachers with a particular interest/skill could take a number of classes for art or music, for example. An issue to be considered, however, is the personalities of the teachers involved. They need to be able to work together, to have complementary strengths and to be compatible team members. Trust is a key aspect of co-teaching. Irish teachers have long had a culture of working alone and this has often been exacerbated by competition between small rural schools for pupils. However this situation is rapidly changing through activities such as sharing of special needs teachers and now sharing of resources and ideas is rapidly becoming the norm. However, the perceived surrender of control can have an impact which should not be underestimated.

Collaboration on a daily basis was most commonly seen in two particular settings. In larger schools, teachers of same classes plan programmes, support each other and share expertise, ideas and resources. This form of collaborative planning has the advantage of possibly sharing the documentation workload. Different teachers may write up different curricular plans following collective decision-making, discussion, exchange of views and opinions. In all schools, collaboration with SEN[8] teachers was widely evident, particularly in relation to drawing up IEPs[9] and was considered essential by teachers. Facilitating the IEP process allows for an opportunity to exchange

7 Special Needs Assistants
8 Special Educational Needs
9 Individual Education Plans

ideas and information about the learning needs of the child in a less stressful environment than the classroom. In many of the schools represented, a form of 'Team teaching' takes place where SEN teachers come into class to work with or support small groups while the class teacher works with the rest of the class or vice versa. This is very widespread and is proving to be more satisfactory than the traditional 'withdrawal' of pupils from their base class for learning support.

Another example of collaboration mentioned was in the area of staff training. Some reported that a teacher had attended courses in curricular or related areas and then reported back to the staff at staff meetings or SDP days. However, inservice in collaboration techniques, time management and cross-curricular planning was considered necessary.

There was strong support for the view that collegiate support should be given to young teachers and that induction and mentoring should be part of school policy. It was suggested that support should ideally be given by teaching staff members since principals have so little time available to them due to other pressures. Teachers acknowledged that younger teachers often bring new strengths and expertise to a school.

The greatest challenge to collaboration for all teachers is finding the time. This was repeatedly emphasised. Collaboration requires proper planning, and some teachers were strongly of the view that co-teaching and team teaching should not happen without careful planning. Planning time for this collaboration is not built into the system. Planning for lesson content, methodologies and learning resources is not enough, as classroom organisation/management issues also need to be clarified and clear role definitions worked out for the teachers involved. There was quite a heated debate as to whether the school day should be extended to facilitate collaborative planning and planning for collaboration. Some teachers voiced the opinion that teachers were already giving of their time before and after the school day and so it should be recognised and rewarded. Many other teachers thought that this would be tantamount to a worsening of the conditions of service for teachers and therefore should not be considered. Initiating collaboration can be complex, but it was thought that the time and effort was worth it. The lack of system provision for Whole School Planning, which is a prerequisite to collaborative practice, is an issue for many teachers. If two to three planning days were made available to schools each year, there would be opportunity for meaningful collaborative planning where colleagues could engage with each other in a professional setting and exchange ideas, experiences and understandings.

In addition to the lack of time for collaborative work, other barriers identified by teachers were the continuing paucity of resources, insufficient access to appropriate learning materials and a lack of space. Many classrooms are not large enough to accommodate the class teacher, pupils, learning and/or language support teachers, SNAs, teaching materials and space for groups. Large class sizes exacerbate these space difficulties. As delegates stated, it is no longer sufficient to be told that the system's

greatest resource is the teachers!

In summary, it was agreed that the advantages of good collaboration made the effort worthwhile. The benefit to children does not relate only to teaching and learning. Children can see the benefits of teamwork and it encourages them to develop similar practices in their own learning journeys. However, the great potential inherent in collaborative practice for the educational system is not being tapped into to any great degree. Investment in schools to create the space and time for collaboration is essential. There is no such commitment at present. Until such investment even the minimal benefits of quality control, staff development and CPD[10] will remain lost to the Irish education system.

9. Professional development needs of teachers to exploit fully the potential inherent in using a wide variety of methodologies

Teachers in the main thought that demanding working conditions such as large class sizes were a greater challenge to the widespread use of a wide variety of teaching methodologies than deficiencies in training in methodologies at initial training or in service professional development. Smaller class numbers would greatly enhance the opportunities to use a wider variety of teaching methodologies and be a far more significant factor in increasing the frequency and variety of classroom methodologies.

However, teachers with specific skills or expertise in particular subject areas, such as Music, PE and Art, could share their expertise with teachers in other classes. Opportunities for teachers to learn from each other need to be provided for in the system. The school should be enabled to use its own resources for the training and professional development of its own staff initially. Sessions at staff meeting can be given to teachers to share good practice and their ideas on what works in their classroom. There was general agreement that this collaborative learning is happening more frequently among newly qualified teachers and through incidental or planned mentoring systems operating in schools around the country. It was felt that INTO should negotiate with the DES towards granting 2/3 days per annum for teaching staffs to work on approaches to teaching – teachers having first identified (at individual school level) what their needs are.

Where the school does not have the required expertise the services of 'cuiditheoirí'[11] were seen as extremely valuable. Assistance is available in planning and curriculum implementation from the PCSP[12]. Participants expressed a preference for 'cuiditheoir' support in schools over seminars away from school. However, it was stressed that substitute cover should be provided to allow teachers availing of this serv-

10 Continuous Professional Development
11 Advisory personnel from the Primary Curriculum Support Service
12 Primary Curriculum Support Programme

ice to attend demonstrations, model lessons and exemplars in their schools. Teachers also suggested the provision of model lessons/exemplars on DVD or online which teachers could access to see best practice. The modeling of a lesson by the cuiditheoir was regarded as the most welcome and significant learning opportunity by teachers. One delegate related how having observed a 'cuiditheoir' modeling a PE lesson his "outlook on PE has changed for the better".

However, it was also noted that the 'Modeling' approach is already working well in some schools, where creative educational leaders have provided for opportunities for colleagues to model good practice for each other, effectively using the schools own resources and expertise. It was suggested that this could be integrated gradually in a more widespread way into the school system as a primary method of professional development for teachers in their own schools.

Delegates stressed, however, that not all schools would be able to meet their identified professional development requirements within school resources. Small schools would have particular difficulty. The clustering of small schools to provide a broader expertise base was suggested as a part of the solution for smaller schools. In addition to the PCSP, local education centres, colleges of education and universities were identified as providing valuable professional development opportunities for teachers. It was strongly felt that quality professional development in ICT in particular is essential for all primary teachers in relation to the use of **relevant** software as a tool in the implementation of various aspects of the revised curriculum.

Accreditation attracting an allowance was identified as an incentive for teachers who follow post graduate courses, especially in curricular areas which enhance the practice of teaching and where skills learned are subsequently shared with colleagues. The scope for a modular menu system of CPD leading to masters qualification is self evident here.

A major theme in all discussion groups that considered this question was that CPD should be incentive driven. While there was unanimous agreement that there should be some incentive for teachers to engage in continuous professional development there was no clear consensus on what form this should take. Suggestions included payment, credits and EPV[13] days. In the case of the latter, it was stressed that EPV days should be on a 'day-for-day' basis and that substitute cover should be provided. However, participants were at pains to stress that EPV days were not the only motivation for teachers who engaged in CPD. It is a mark of their professionalism and should be viewed and rewarded as such. There was also strong opinion that CPD should take place during the school year. The practice in other workplaces was quoted, where employees were released for study and upskilling. The idea of a regular sabbatical or blockrelease to engage in CPD was widely supported.

13 Extra Personal Vacation