THE WINSTON CHURCHILL MEMORIAL TRUST OF AUSTRALIA

Report by Margaret Yoon, PhD – 2007 Churchill Fellow

To study the Impact of Accelerated Learning Techniques in Schools- UK, Canada, USA

CONTENTS

Introduction

Education today faces a number of challenges. First, increased technological developments have led and will continue to lead to structural unemployment. This will require individuals to be continually adapting, to up-skill and re-train in order to survive changes bought on by a rapidly changing world. Young people in particular, need to be empowered to learn how to learn and be motivated for a lifetime of learning. Secondly, rapid technological change has increased the gap between school and the world outside of school. This challenges teachers to deliver programs that are sustainable and relevant. Administrators and teachers need to look at ways of how to make learning meaningful and relevant for our generation of 'Y' and 'Z' learners.

. A model of learning that could help address the challenges of education is the Accelerated model of learning and teaching. Accelerated learning implies the increased speed with which learning can take place when certain techniques are used. Today the Term Accelerative Learning (or AL) is widely accepted as it implies "consistent, increase in improvement" (Frischnecht & Capelli, 1995, p. 23).
A number of AL models exist today. These include IAL's Accelerated Learning Cycle (International Alliance for Learning) and Quantum Learning developed by Bobbi Deporter. Some practitioners consider Brain-Based or Brain-friendly learning as Accelerated Learning and still others use what is described as Basic AL (Norman, 2003, p. 9) where the tools and techniques of Accelerated Learning (eg. use of Baroque music) are employed to augment and enhance traditional teaching methods.

Research studies into the impact of Accelerated Learning in the naturalistic environment of schools have been very limited. Whilst the Accelerated Method is widely known in the United States and, Canada and parts of Europe, whole school approach to the practice of Accelerative Learning techniques is hardly known in Australia. Having done research work in this area, I was keen to experience the Accelerated Model as practised overseas; look at variations of the model; study its impact and mode of implementation; as well as to verify my own findings so as to provide enough justifications for its wider application here in Australia.

Acknowledgements

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Executive Summary

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Project Title

The main purpose of my Churchill Fellowship was to study 'The Impact of Accelerated Learning Techniques in Schools' however, as the Fellowship unfolded other aspects of Accelerated Learning were included in the project.

Program

Travel took place between January 6th and February 17th 2008. The schools visited are as follows:

Canada, Regina, Saskatchewan	Michael Riffel High, Dr. Le Boldus High, St. Matthew Elementary School
USA, Plano, Texas	Medenhall New Arrivals Centre, Manorial Elementary School Frankford Middle School, Daffron Elementary School
USA, Houston, Texas	Spillane Middle School
UK, Manchester, Lancs	Stamford High School, Ashton-Under-Lyne
UK, Northumberland	Cramlington Community High School

The main lessons learnt from this investigation are:

a. Accelerated Learning and Brain-Based techniques can be successfully applied in the naturalistic environment of schools and children learn best in stimulating, safe and stress-free environments and when individual learning styles and multiple intelligences are catered for.
b. The inclusion of learning to learn tools and the 5Rs (Resilience, Resourceful, Responsible, Reasoning, Reflective) into the Accelerated Cycle of learning has improved the quality of the AL model. The direct teaching of cognitive tools provided the catalyst for improvement in learning and also equips learners with the tools to become independent, life-long learners. Attention to the 5Rs helps in the development of the whole person.
c. Consistency and predictability were important elements in the Accelerated Learning Cycle
d. Whole school implementation of the AL model requires competent leaders with the vision, knowledge and energy to ensure alignment of the different elements in the system, to achieve the desired outcomes.

Recommendations

i. The Accelerative Method of learning when embedded with cognitive and learning to learn tools is a cutting-edged model that needs to be widely adopted in the Australian Education system so that young people can be empowered to become independent and successful learners who can lead healthy and successful lives and can contribute positively to society

ii. A whole-school implementation approach is recommended to ensure sustainability and consistency of practice.

Implementation and Dissemination

- Provide workshops and training sessions on Accelerated Learning to fellow professionals though the Catholic Education Office, Perth and Association of Independent Schools, W. Australia
- Paper written will be made available to the International Alliance for Learning Organisation for publication
- Share findings with my own College community and help develop plans for whole school implementation of the AL Cycle of Learning if needed.

Schools visited in the Regina area, Saskatchewan, Canada

Introduction

This researcher went to Regina after being inspired by one of the best practitioners in Brain-based learning at the 6 International DGSL-Kongress, Leipzeg, Brehna in September 2002. As a Principal, Bert Yakichuk has introduced whole-school brain-based learning and teaching to at least three high schools in Regina. He was also largely responsible for the training of staff in these schools. Yakichuk spoke of noticeable improvement in academic standards and attendance when brain-based strategies were introduced to the schools when he was Principal.
Three schools were visited in Regina: Michael A. Riffel High, Dr. Le Boldus High School and St Matthew Elementary school.

Michael Riffel High School

Background

Riffel High is a Catholic co-ed school of approximately 920 students with a high record of excellence in academic achievement and in athletics.
The visit to Michael Riffel High was of interest to this researcher as it is one of the top high schools in Regina; however, it was not one of the schools that Yakichuk introduced whole school Brain-Based (BB) learning. The researcher was interested in finding out what elements were present that enabled Riffel High to achieve high standards. Does it mean that schools can also achieve good results without BB or Accelerated Learning Strategies?

School Physical Environment

Riffel High had a warm welcoming atmosphere. The school walls are decorated with students' artwork and also exclusive pieces of art donated by school leavers each year. Cabinets of trophies won by the school are also on display. There are also liturgical banners, made and donated by school leavers. The school hallways are clean, free of litter and students appear to be respectful and polite. The classrooms visited by this researcher were all decorated with stimulating posters or students' work. The overall impression is that effort is taken to create a non-threatening, low stress, clean and attractive environment that is brain-friendly and encourages learners to learn and as Forster and Reinhard (2000) pointed out, also ensures the full physical development of their brain (Forster & Reinhard, p.64, 2000). Displays of trophies won by the school, students artwork and posters have other positive effects. First, it instils a sense of pride and tells the student that his or her work is valued. This is very affirmative and helps to increase self-esteem and confidence. Secondly, displays and posters enhance and add colour to the school environment which according to Jensen (1995) is part of the spectrum of electromagnetic radiation and can affect learners' moods, enhance a classroom atmosphere and help to engage learners (Jensen, 1995, p. 57). Further, displays and posters not only encourage positive behaviour, they also outline the school's expectations of all of its students. This as Bresciani (2005) points out, can provide a higher sense of security for students as they realise that inappropriate behaviour is not acceptable (Besciani, 2005, p. 39).

Emotional Environment

The School's Mission Statement which "focuses on developing respectful, responsible and knowledgeable citizens grounded in the values of Christian Faith" provides the anchor of what it means to be a student at Riffel High. It also determines expected codes of behviour

The school day starts with prayer led by students through the PA system and everyone, including administrative staff and teachers participate and pay attention to the notices that are read.

The life of the school is very much embedded with religious values. Students themselves have formed prayer groups and meet at lunch time on Tuesdays. The researcher was told that students in this school like to talk about their faith and symbols of faith are displayed throughout much of the school. The school chaplain also helps to prepare paraliturgical celebrations for communal celebrations. Rituals, such as morning prayer and communal celebrations remind the students of their Christian heritage, their values and fosters a sense of belonging and emotional security which in turn help to create a positive environment for learning.

The Principal has emphasised to teachers that the key to class management is to get to know their students and to build positive relationships with them. This is an effective way of ensuring the well-being of both staff and students and in turn help to foster a positive climate for learning. Another way of how the Principal ensures the well-being of students at Riffel is to have each teacher choosing four students in the school and to track their progress. The aim of this pastoral care exercise is to identify those students who are struggling and to look at ways of how these students can be helped to become better learners. The information collected is also shared with parents so that they too, can be involved in their child's learning by giving support and help. Each month, a parents meeting is held. These are attended by the Principal and Vice-Principal, teachers are not required to attend these meetings unless there is a concern about a specific subject area. The parents' meetings are opportunities for the school to discuss any issues they may have with students. In general, as pointed out by Ms Bender, the Principal, these meetings have been well attended as parents in the school are very supportive and want their children to do well. To further ensure a safe environment, the Principal and Vice- Principal take it in turns to go round the school each day. They are visible, they "get to know the kids, check on uniform, affirm good behaviour etc.. they know who is the Principal …"(Bender, personal communication, January 10, 2008). Although the Vice- Principal helps with pastoral care issues, students who misbehave are generally sent to the Principal and she deals with them and, "nib it in the bud before it gets serious" (Bender, personal communication, January 10, 2008).

In sum, the rituals and structures set up in the school help to ensure a positive and safe emotional climate so that misbehaviour is reduced and energy can then be focussed on learning, allowing the brain to switched on to higher levels of thinking.

Instructional Strategies

Riffel High does not follow a prescriptive template for lesson plans. Teachers are encouraged to provide diversity and basically, try to meet the needs of the students. Staff members are given time for professional development at least once a month. Staff members work in professional communities where teachers learn practical, useable classroom strategies from one another. It is important to note that Riffels's Principal, Ms Bender, has worked as Vice-Principal for a year at Dr. Le Boldus High. In this context, it may be correct to speculate that many of Ms Bender's practices at Riffel High could have been influenced by the work of Yakichuk who introduced whole-school Brain-Based learning at Dr. Le Boldus High. The same "flow –on" effect can also be said of teachers sho joined Riffel High from other schools such as Archbishp O'Neill, Dr. Le Boldus High and Miller Comprehensive High School where Yakichuk had laid the foundations of whole-school BB learning.

Brain-Based elements of learning were noticed in a Media class where students had their own choice of topics to investigate. The class had a multi-sensory environment and therefore appealed to a range of learning styles. There was the use of music (musical intelligence); use of computers, digital cameras (kinaesthetic Intelligence). Students were allowed to work in groups
(Interpersonal Intelligence) and the teacher celebrated their learning by showing to the class, video-clips different groups had made in the class. This was also an opportunity for peers and teacher to give positive feedback and celebrate learning. Students were also encouraged to practise their photographic skills outside the classroom following certain set criteria. This creates novelty and also gives students the opportunity to take up responsibility. The students in this class were really having fun and enjoying their learning. According to Jensen (1995) giving positive feedback and allowing students to work in novel and real life environments helps to boost learning and enrich brain growth (Jensen, 1995, p. 146).

In another Politics class, the teacher began the lesson with a list of “Quick 30s Ways” of confusing their room mates. This helps to focus attention, lower stress levels as the class broke into ripples of laughter. Once this ‘Preparation’ stage was made (first phase in the Accelerated Learning Cycle), the teacher enters into the second phase of ‘Connection’ asking students what they had learnt the previous lesson. The third phase of the learning cycle was introduced using a handout on government which the teacher explored with the students using discussions. Work for further consolidation was then assigned. One student fell asleep, but there were no loud reprimands which would have created stress in the class room. Instead, the teacher left the student for a while then went across to him and gently tap him on the shoulders to “get him back to class”.

In this school, there were still classes taught using the ‘traditional model’ of talk, overheads, students listen and copy. However, all teachers are encouraged to cater for diversity and to meet the needs of the students. The lecture type ‘chalk and talk’ mode of delivery may well appeal to those who prefer to learn aurally and students who are more verbally-linguistically inclined. This was the case in an English class attended by the researcher.

Conclusion

In conclusion, it can be said that although whole school Brain-Based learning was not directly introduced to Riffel High, many of its practices are in fact brain-friendly strategies (eg, creation of a safe environment and catering for diversity) founded on a platform of Gospel Values. It is likely many of these recognisable brain-friendly practices have been influenced by a Principal and some teachers who used to work in schools where Brain-Based Learning was a priority. It would be difficult to even imagine Riffle High being able to reach its present high standards without a strong leader and one who understands diversity and the importance of a safe, brain-compatible environment for learning.

Dr Le Boldus High School, Regina

Background

Dr. Le Boldus High is a Catholic co-ed school of about 800 students and a faculty of 70. It offers an Advanced Placement Program and an Immersion program, The Advancement Placement program allows students to earn credits towards university entrance. Most students from Le Boldus High move on to post secondary education and Tertiary studies. The school has a tradition of academic achievement. In

Saskatchewan, a student requires 24 credits to graduate, the average credits points achieved by students from Le Boldus is 31.

This researcher was interested in visiting this school because, Yakichuk had been its previous principal. Yakichuk had spoken of the significant academic and attendance improvement at Le Boldus since whole school BB learning was introduced. It was of interest to this researcher to find out whether Brain-Based Learning and its impact was sustained at Le Boldus since Yakichuk retired from Le Boldus.

School Physical Environment

Like Riffel High School, Dr. Le Boldus High had a welcoming and warm atmosphere. Students were well-mannered and spoke confidently when this researcher asked for directions to the office. All the classrooms visited by this researcher are decorated with relevant stimulating material to encourage learning from peripherals.

Emotional Environment

Le Boldus's Code of Honour provides the foundational values and indicates clearly to students, their expected code of behaviour at the school. Qualities such as honesty in academic endeavours; integrity; respecting the divinity, rights and property of others; nurturing care and concern and civility to others; accepting responsibility; help to maintain good behaviour which in turn, helps the learning process and enables higher order thinking. Good behaviour also helps to provide a safe environment and this is a basic Brain-Based condition for optimal learning. Good behaviour is furthered maintained by the Leadership Team, the Principal and Vice- Principal who make it a point to go round the campus during the school day and make themselves visible; talking informally to students and teachers and expressing interest in their activities. This researcher witnessed the Principal, Mr Reed, speaking encouragingly to a couple of senior boys along the corridor about their Basket Ball (11th January) game loss to Riffel High school two nights ago.
The Vice-Principal takes a big interest in the attendance records of students because it is the belief in Le Boldus that there is a close correlation between academic success and regular attendance at school. Appropriate support is given to those students who for legitimate reasons, are not able to attend school. In his February school newsletter, the Principal also encouraged the school community to support each other through acts of kindness.
Each school day begins with prayer through the PA system, and like Riffel High, everyone stops work, becomes a participant and listens to the notices of the day. As mentioned earlier, rituals such as prayer engenders a sense of belonging to a community and reinforces the values and rules that characterise that community. In

sum, there is a very warm, supportive learning environment (a brain-friendly strategy) at Le Boldus High that encourages students to “Touch the Sun” (school motto) and reach their highest potential.

Instructional Strategies

There was evidence of Brain-Based instructional strategies being sustained at Le Boldus. Teachers for instance, spoke warmly of Yakichuk and his suggestions for teachers to increase the frequency of evaluations and giving feedback, so that students can go on improving. All classes visited by this researcher had stimulating charts and students’ work on the walls to encourage peripheral learning as well as to acknowledge the students’ effort. The Calculus class visited by this researcher was particularly interesting in terms of brain-based strategies used. There was use of colours for board-work. Research studies by Backman (cited in Jensen, 1995, p. 56) pointed out that recall for memory for colours was much stronger than memory for verbs. The walls in this classroom contained colourful, inspiring Maths formulae and posters, most of them made by students. The teacher constantly referred to them during his lesson. The use of colour, pictures and posters is one of the best ways of triggering the brain’s visual system, helping learners to sustain attention and retain the information for longer (Jensen, 1995, p. 56). Sometimes song and rhyme were used to help in the learning (eg ‘Oh Calculus, Oh calculus’ to the tune of ‘Oh Santa Claus’) and whenever possible hands-on activities connected to the real world are employed to make the learning more meaningful. For example, in the calculation of the volume of a trapezium, the students had to go out to the school’s emptied swimming pool and actually measure the pool. Also, with parental permission, students had to drive for 20 minutes at different speeds to learn about calculations of time and distance. Such practical activities allow students to experience the connections of maths to the real world. These are the types of lessons that are the most engaging and the most memorable. Edmonds & Kagan (cited in Jensen, 1995, p. 326) maintained that, “ in spite of all the educational restructuring and reform, there is one single change that would do more to motivate learners than any other: make school more real and less artificial. Learning is best when it’s rich with real-life situations, problems and solutions.” Students in these classes were also allowed to pair-share and discuss solutions. The number of students in this teacher’s Maths classes usually go over 27 (average in a class is 25) and sometimes numbers go up to over 30. The strategies employed by this teacher resonates with the students, hence it is not difficult to understand why the numbers are high in these Maths classes.

There are some classes that still follow the traditional, lecture type mode of delivery which as mentioned earlier, may well appeal to the word-oriented learner; however, this researcher did noticed a couple of students drifting of into Never Neverland, students were asked to think about questions asked but not allowed to share their ideas with their peers.

Conclusion

Dr. Le Boldus High school is a high achieving school. In 2007, one of its students was offered credits from four universities which is a great tribute to the school's standard and achievement. Some of the reasons offered for the success of Le Boldus were that it had a stable staff and this as pointed out by the Principal, was a great help. This researcher however, would argue that if there was little staff turn-over, than the majority of staff would have worked under Yakichuk, the school's previous Principal who had introduced Brian-Based Learning to the school. In his time, Yakichuk believed that, "there was a significant increase in language skills and Maths development and those high levels seem to be maintained, so the changes worked and continue to work as the school tends to do very well" (Yakichuk, personal communication, February 14, 2008).This shows that the brain-based strategies that were previously introduced have been sustained in this school. However, recognition needs to be given to a strong leadership team led by the present Principal, Mr. Reed, for without good management, its esteemed reputation, its conducive physical and social environment; its legacy of good results would have been tarnished. Teachers are obviously happy here as they to continue to stay on at the school. The Principal says that a stable staff meant that teachers could build relationships and worked successfully in professional learning communities as teachers could trust each other and work together collaboratively, to maintain standards and to reduce overlap of Outcomes covered (D. Reed, personal communication, February 10, 2008). Staff are given time off to work with four other schools in the district to ensure comparability of standards. The excellent results have also been attributed to a highly motivated student population who wants to do well and whose parents, mostly professionals, have high expectations of them. This researcher would also like to point out, that the elementary feeder schools from where the majority of Le Boldus students come from are mostly Brain-Based schools where these students would have the grounding in BB strategies for learning. These strategies would have included their own preferred leaning styles, cognitive tools such as Mind Mapping and the ability to learn independently. Independent Learners are able to get on with the business of learning and continue to apply the tools of learning independently and so continue to do well. This is confirmed in a research study done by Yoon on a group of 641 students in a high school in Australia (Yoon, 2005).

In sum, the excellent academic records at Le Boldus could be attributed to a competent leadership team who is able to maintain and ensure a safe and optimum environment for learning. Brain-based strategies have been maintained by a stable staff who continue to apply strategies they have inherited from the school's previous principal. Some classes are still taught using the traditional methods but most of Le Boldus' highly motivated student population would have coped with this as they have a foundation of skills and strategies learnt from their previous Brain-Based Elementary schools.

St Matthew Elementary School – A Brain-Based School in Regina, Saskatchewan, Canada

St Matthew is one of the elementary schools in Regina where whole-school Brain-Based Learning has been introduced. In the context of St. Matthew Elementary, this researcher would like to describe what whole school Brain-Based learning looks like and how it was introduced.

St Matthew's Brain-Based project began in 1999 when its Effective School Team comprising the Principal, Vice-Principal and three teachers decided to incorporate BB Learning, the theory of Multiple Intelligences, learning styles and alternate forms of assessments (rather than just written tests) into their school curriculum. Principal, Jamie Breschiani had worked closely with Yakichuk when the latter was Principal at Archbishop O' Neil High School in the 1990s. Beschiani has taught chemistry at the school and noticed the increased levels of motivation, higher achievement marks and lower absenteeism when BB earning was introduced at the high school. Hence, the plan to choose BB learning strategies over other programs as a way of providing the best learning opportunities for students at St. Matthew, did not meet with much opposition (J. Beschiani, personal communication, 10th January, 2008).

The procedural steps taken to introduce whole-school BB learning to St Matthew is outlined below and is based on Breschiani's Masters Thesis written in 2005.

1. 1999, Effective School Team (EST) consisting of Principal, Vic-Principal and three teachers was established to assess the needs of the school.
2. After much discussion, EST decided on a Brain-Based Learning Enhancement project to further improve quality of education already present at St. Matthew.
3. Decision then made to implement project cautiously so as not to alienate staff and students. A new Brain-Based Project Team (BBPT) was set up to include all teaching staff who were interested in the project. Three quartes of the staff signed up to be part of Brain-Based Project Team.
4. BBPT decided on a Three-Phases approach to be run over three years:
   a) Phase 1, Year 1: concentrate on developing effective school and classroom environments as well as integrating some initial Brain-Based techniques into the classroom. The purpose of Phase 1 was to help teachers understand the importance of creating an optimal environment for learning and how to establish them.
   b) Phase 2, Year 2: Continue as in Phase 1 plus the integration of concepts of Learning Styles, use of portfolios and additional Brain-Based strategies.
   c) Phase 3, Year 3. Addition of Multiple Intelligences, rubrics and alternative forms of assessment.
5. BBPT collected resources on Brain-Based Learning including programs offered by other schools. Each staff member was allocated some reading from the resources collected and to identify strategies that would be useful for the project. The purpose of this process was to help staff understand the concepts of BB Learning and to involve everyone in the planning process .

6. BBPT met to discuss findings. Through discussions, the strategies identified were put into two categories: those that pertain to the school building and those that were specific to classroom use.

In each category, there were strategies that would definitely be used and those that could be used at the teachers' discretion. The decision to have some strategies optional was to allow teachers to try them when they felt comfortable so as to reduce the stress levels associated with change implementation.

7. BBPT presented and explained Phase 1 to the rest of the staff who voted unanimously to proceed with the project.

8. Project was also presented to the School Board to gain funding and assurance that staffing changes for St. Matthew would only be made only as necessary.

9. Project was presented to parents over two meetings. There was overwhelming parental support and parents indicated that, "it was exactly the type of program that they would like to see in our school" (Bresciani, 2005, p. 25)

10. BBPT set up series of in-services to go through aspects and strategies of the Phase 1 and how strategies would be implemented. BBPT purchased resources necessary for school and classrooms (eg. CD players, inspirational posters, bean bag chairs, plants) In addition, those teachers who were interested, also received aquariums, lava lamps, miniature fountains. The purpose of this was to create a friendlier and more inviting environment. The administration staff also started taking pictures of various school events and put them on the photo wall next to the office. Posters containing messages of respect and trust were also placed around front doors of the school. These environment strategies for classroom were in place by the end January 2001.

11. BBPT and whole staff met in January to decide on starting teacher in-services dealing with some strategies to be implemented during 2001. There were to be three after school workshops held over four months. These workshops included brain-breaks, use of music in class and teaching and learning with the computer. Scheduled professional development in May was to be devoted to teachers discussing strategies from Phase 1 and sharing various ideas and experiences they had tried.

12. Data Collection. Teachers' and students' surveys were conducted. Teachers were asked to reflect on strategies that have been used to enhance school and the classroom environments and to rate the effectiveness of each strategy used. The students' survey included the same items as the teachers' survey but students only had to rate each item as to whether they like or dislike it.

In addition to the surveys conducted, teachers and a sampling of studene were asked to comment on various aspects of Phase 1 using a questionnaire.

13. Parents were kept informed of the process of the project as well as the results of the surveys via the school newsletters.

14. Preparation for Phase 2 of the project began in the final two months of the 2000/2001 school year (June, July). Data collected so far was presented to the entire staff.

15. Staff made decision on what strategies to carry forward into Phase 2 and a list of strategies that were to be implemented throughout the school and the ones that were to be left up to teacher preference. BBTP also

decided to include new strategies in Phase 2 and each team member were to check resources to find strategies that could be used to enhance the learning environment. Ten new strategies were selected with four designated to be used throughout the school. The four school based strategies included a mid-morning nutritional snack, weekly school themes focusing on aspects of positive behaviour; a morning classroom ritual of posting a short assignment for the students to work on after they entered a room and finally the posting of a classroom agenda for the day (Bresciani, 1995, p. 31).

15 Phase 2: Review. Environmental strategies used in Phase 1 were revised and maintained throughout Phase 2 and 3. In Phase 2 teachers concentrated on integrating the concepts of learning styles into their instructions and also explored the use of rubrics in assessment. In-service on learning styles was provided early on in the school year and additional resources purchased.

16. Review of Phase two at the end of the school year and prepare for Phase 3. Phase 3 concentrated on the application of Multiple Intelligences in classroom instruction. Teachers were in-serviced on this. As in Phase 2, teachers started out with one intelligence at a time, so that by the end of the year they were using all 8 intelligences as part of their regular instruction.

17. Third Phase completed. Teachers were at a point where they were using environmental strategies to create a positive, low stress, non-threatening environment. They were also meeting the needs of the students through the use of learning styles and the use of multiple intelligences. In the fourth year, teachers continued with the strategies set out in the project and had further in-services on multiple intelligences.

With all 17 implementation steps in place what would a visitor see and experience in a Brain-Based School? At St Matthew, as one go through the main doors, the symbol of communal celebration is located at the front wall, the alter, the focal point where paraliturgies and masses are celebrated. It reminds the visitor and the children, that St. Matthew is a Catholic community where Christian values are foundational to its existence. The main corridors are beautiful decorated with posters and a photowall depicting the activities children in the school have participated recently. Students come to school with two pairs of shoes, one for outdoors and one indoors. This meant that the floors in the school are very clean, so very clean that students can use the corridors as additional space for working. The cleanliness and bright corridors conveys a message that the clientele within it has great sense of respect and responsibility, there is neither litter nor graffiti around. The students help to maintain the beautiful environment. Although, some teachers were at first resistant to the concept of whole-school BB strategies, they all agreed on one thing; and that is to provide a safe, learning environment. Classrooms are to be made brighter, there is to be no screaming or shouting in the school (Breciani, personal communication, January 10 2008) Certainly, when the visitor enters the school, he/she can witness the calmness within the school walls, the children are busily engaged, they speak but do not shout and the researcher did not see anyone throwing a tantrum as some young children tend to do. The classrooms are beautifully decorated, some with plants, flower arrangements and ceiling hangings eg. kites or streamers of giant snow-flakes. All classroom windows have some kind of a drape or lace valances around the them to make the room cosier and friendlier. Classroom walls also contain students' work and inspirational posters. The researcher was particularly drawn to the very attractive, decorated classroom doors to each classroom. The decorations follow a particular theme: eg. Castle, Snowman. Each class teacher must have spend hours making them. This reflects the commitment and motivation of the teachers themselves who obviously want the Brain-Based Enhancement project to work. The decorations also reflect their understanding of stimulating environments to encourage learning. The importance of an optimal learning environment and teachers' positive attitude cannot be underestimated. Lozanov (cited in LeHecka, 2003, p. 24) believes that everything is *Suggestive* and can have a greater impact on a student's ability to learn than what is taught consciously.

The Principal's office has an aquarium. As he explains, should a kid(s) get sent to him, he/she can watch the fishes for a while to de-stress and get calmed before he speaks with them. The Principal also frequently visits classes to get to know the children and also to show them a "magic trick" this is to let the students know, that the Principal is not one big monster but a person they can talk to.

What of the results of whole-school BB learning at St. Matthew? Although no statistical data was given to this researcher, the Principal reported that in the four years since they have implemented the project, students and teachers have rated the program very highly. Parents were particularly impressed and said that the "School has a different feel about it" compared to other schools. The kids were also coming home and explaining to parents how they were learning in different ways (Bresciani, personal communication, January 10, 2008). Other positive results included the improvement in behaviour, since BB strategies were implemented. As lessons were geared to the needs of the children and matched their learning style and multiple intelligence, it is expected that there is greater engagement and therefore a reduction in misbehaviour. The students are reminded that everything they do has a consequence and at St. Matthews, the "good consequences" are emphasised. This year the school have had three ski trips instead of two. The students in upper grades could have the use of a room for "Tavle Football" and "4 Discs Disco" at lunch time but they must take responsibility if the room was to stay opened.

Other spin-offs of the Brain-Based learning project at St. Matthew's school were noted in the way the students coped in High School. Ex-students from St. Matthew have reported that there is a difference in the richness of the classes between those teachers who used Bran-Based technologies and those who did not in the high schools they are currently attending. However, the students who were exposed to Brain-Based methods were able to learn more independently (Bresciani, personal communication, January 10, 2008). Bresciani, also reported how two boys at his school who were very impulsive when they first started off at St. Matthew have now toned down very much to the point that they are now managing their behaviour much better , thus allowing others to learn and the teacher can get on with teaching.

In summary, Brain-Based schools are characterised by safe, conducive and stimulating environments that positively impact upon learning, attendance and behaviour. Successful whole-school implementation of Brain-Based strategies require leaders who are skilful managers and organisers; and people who have the passion, commitment and understanding of what is real learning and have the perseverance of seeing a project through. They also have volumes of people skills, are empathetic and understand the importance of group members taking ownership in decision making rather than force decisions upon its members. This was the case at St Matthew Elementary School. Sustaining the joy of learning, high standards of behaviour and academic results in schools also require leaders who understand the needs of students and staff and their diversity of learning and teaching styles. Leaders with vision and the heart of learning as their goal, are able to invest money and time for professional development, meet with parents to harness their support and very importantly, able to maintain and provide a conducive environment for successful learning. This is one of the main pillars of Brain-Based Learning as was characterised in the three schools visited in the Regina area.

Accelerated Learning in schools in the Plano District, Dallas, Texas

Four schools were visited in Plano, north of Dallas, Texas. The schools are Mendenhall Elementary, Memorial Elementary, Frankford Middle School and Daffron Elementary School. This researcher was particularly interested in the Newcomers Programs attached to the above mentioned schools and to experience how Accelerated Learning methods were employed in the teaching of English to immigrant children.

The purpose of the Plano Independent School District's (PISD) Newcomers class is to introduce immigrant students to the American Culture, its school system and to provide them with a basic understanding of the English Language (Wear, 2008, p. 1). The Newcomers program is described "as an innovative, research based program that accelerates English Language program development, improves academic performance and instils a positive self-concept in students who are newly arrived" (Wear, 2008).

The success of the Elementary Newcomers programs are reflected in the end of year RPTE (Reading Proficiency Tests in English) and oral language proficiency tests. In the 2005-2006 school year, 41% of students made gains to Advance Level and 12% to Advanced Level in RPTE testing. When these figures were collapsed, they represented 53% of students who made gains of Advanced and Advanced High. In terms of reading results, 68% of students made gains of 3 to 5 reading levels in one year. The success of the program is found in the Newcomers Model of instruction and the dedication of staff who facilitated the programs. The program and its principles are now explained below.

The Newcomers model of instruction is founded on seven researched-based principles

(Wear, 2008).The program of lessons, based on the Accelerated Learning (AL) cycle, are carefully structured using the most common learning styles (visual, kinaesthetic and auditory) to facilitate learning and memory retention. Referring to Wear's work (Wear, 2008), a summary of the Newcomers model of instruction and its research based principles is now provided for the convenience of the reader.

Principle 1: According to Nuthall (cited in Wear, 2008, p. 4), learning is enhanced when a teacher identifies specific types of knowledge that are the focus of the unit or lesson Each Accelerated lesson not only identifies the specific vocabulary and content to be taught but progressive units of learning experiences are also planned around these two elements.

Principal 2: Marzano has pointed out in *What works in Schools*, (cited in Wear, 2008, p.4) that learning requires engagement in tasks that are structured or are sufficiently similar to allow for effective transfer of knowledge. In terms of the Newcomers Program, each AL lesson, contains three related and progressive units of leaning experiences and three activities to help the student internalize the knowledge and content that was taught.

Principal 3: Two writers, Rovee-Collier and Nuthall (cited in Wear, 2008, p.4) have asserted that learning requires multiple exposures to and interactions with knowledge. Students also, require at least four exposures to content to adequately integrate it into their existing knowledge base. In the Newcomers' Program, students are provided with at least seven exposures per content objective (Wear, 2008, p. 4).

Principal 4: Nuthall (cited in Wear, 2008, p. 5) maintains that the most effective type of learning experience is dramatic instruction. In the Language Arts Newcomers Program, instruction is done through role –playing in which the students dressed in costumes to portray the characters in the play script entitled, 'Macarena's Dream'. This play script was chosen as it contains survival English, high frequency vocabulary and basic grammatical concepts that are important for proper communication.

Principal 5: According to Murano (cited in Wear, 2008, p. 5) direct instruction of content vocabulary terms and phrases should be provided. In terms of the Newcomers Program, every lesson identifies the vocabulary to be learned by the students. The vocabulary is pre-taught prior to every lesson. Students are presented with image representation and explanation of each vocabulary word. They are then asked to create their own imagery-based representations as well as make connections with other words.

Principal 6: Music is a powerful carrier of signals that activates emotion and long-term memory, Webb and Webb (1990) cited in Wear 2008, p. 6) ; so every lesson in the Newcomers Program is introduced by a reading accompanied by classical and baroque music. The relaxation of the body and brain facilitates learning and enables that learning to be programmed long term memory.

Principle 7: Linking verbal and visual images increases students' ability to store and retrieve information, Ogle (2000) cited in Wear (2008, p.6). Posters of the information that has been taught and will be taught in the near future accompany instruction. This ensures that students are surrounded by learning. Indeed, studies by Pashmakova (1976); Lozanov (1978) and Loubaton (1979) cited in LaHeka (2003, p. 53) have shown that peripheral visual stimuli do have considerable effect in improving learning.

The integration of the above 7 principles were observed in the classes visited by this researcher. These classes are now described below.

Accelerated Learning in Mendenhall Elementary School New Arrivals Unit in Plano, Dallas

The classroom was small but filled with pictures and stimulating material including a pair of mice in a cage. There were 9 students in this class: five, Fifth Graders and four, Fourth Graders. The students, from Mexico, have joined the class only in September and already communicating in English, being able to understand and follow instructions. When this researcher and her host, Secondary ESL Coordinator Libby DeLeon arrived, the students were having a snack break in the class. This is consistent with Brain-Based Learning as research has shown that allowing snack breaks in class can help maintain insulin levels, reduce cortisol and improve glucose tolerance leading to better cognitive functioning, and hence help students to stay on task, enhance their well-being and therefore reduce discipline problems (Jenson, 1995, p. 74).
The lesson witnessed by this researcher was a revision of words associated with the life-cycle of plants beginning with seeds. This was done with the help of flash cards. Some words used were: seed, chlorophyll, photosysnthesis.. These are words not normally taught in a Language course and certainly not to beginners. However, these children were learning science and language at the same time! Active, hands-on reinforcement and integration of the words learnt included the use of maracas. Each student had a pair of coloured maracas. The teacher would say the word and the class spells each letter of the word to the time of the maracas and then rattles the maracas to quick tempo pronouncing the word. The students appeared to be enjoying themselves doing this.
Note: the learning styles used were visual: seeing the words on flash cards, earlier, then hearing it (auditory); and then internalising it using music, pronunciation and movement (kinaesthetic).

Further integration occurred when two packs of cards were given out. Boys in one corner of the room, girls in the other; They had to match the word with the meaning and the picture. The teacher was most encouraging and rewarded the children with a ticket. If they get a ticket, a marble goes into the "marble jar" when the jar is full the students would get a 30 minutes party.., which could just be: “melt down” or chat time. Pop sticks with the children’s’ names were used to select students to do certain tasks rather than the old way of just calling out or “picking” certain kids.

Integration and the learning cycle was complete when soft Baroque music was played and the kids drew, coloured in their illustrations and wrote about the words they have just learnt.
Time passed quickly as the teacher moved seamlessly from one activity to another. The students were fully engaged and enjoying the experience. The teacher was encouraging all the time and she also appeared to be enjoying her work in this class. This encouraging attitude was obviously reflected in her class which stayed positive throughout.

Accelerated Learning in Memorial Elementary School, Plano, Texas

There were 5 students in Memorial Elementary Newcomers Class. One boy from Vietnam had some English before he started some 6 weeks ago; Julieta from Mexico had no English when she joined the class; Gavin from Salvadore; Yan from Hong Kong, has some English; and another student, Jose, from Mexico.

In preparing the students for a lesson on ‘Cause and Effect the teacher purposefully acted out how she felt when she tripped over a pencil. She said to the class, “The pencil made me fall over. The pencil is the cause of my falling over!”

Next, with the help of a flip chart, the teacher tells the story about Jasmin a Saver and Jason a Spender. Jasmine saves all her money (teacher draws notes and piggy bank) whilst Jason spends all his money on lollies each time he gets money. Both had a dream: both wanted lined roller skates, knee and elbow pads (all these were drawn on flip chart as the teacher was speaking, to help the students to comprehend the story visually). The story continues with their birthdays approaching and Jasmine wanted $10, but was given $15; Jason wanted to have the roller skates but there was not much money in his family. He received a few toy cars to add to his collection. He was disappointed.

The story was again recalled with the teacher reinforcing ‘Cause and Effect’. Next, the text of the story was given out with the teacher reading the text first whilst the children followed with their finger under the line. Next the class read the passage together. Followed by a “Round Robin” rotation with each student reading sections individually. Julieta read beautifully and sounded confident. Until 6 weeks ago, she had no English.
Review of the story followed and a check on the students’ comprehension was made to further consolidate their understanding of ‘Cause and Effect’. The teacher also used a Venn diagram to help the students explore

the similarities and differences between Jason and Jasmine. By participating in the discussion the students were practising their use of language. Next, they demonstrated their mastery of what is meant by 'Cause and Effect ' by thinking of actual examples that happened to them during the holidays. They were encouraged to discuss their examples with their peers and record them on a T-Chart.

The teacher next facilitated a class discussion using the students' examples:

Eg: Cause: got up late **Effect:** missed bus

Teacher ask for words on their emotions: how did you feel?

Van : Frustrating, it was kind of sad.

In the final Integration Phase of the Accelerated Learning Cycle, the students reviewed facts on 'Cause and Effect' about Jason and Jasmine. Then the students were given a template on which they had to glue statements on 'Cause Effect' cut from a given handout and ensure that the statements matched. This work was handed in for assessment.

The class worked well and clearly demonstrated that they have understood the concepts of 'Cause and Effect' and were able to discuss their own experiences in class.

Accelerated Learning in Frankford Middle School

There were five students in the Newcomers Class of 6 and 8 Graders. One student is from Poland (Grade 6); one from Erithea who joined this class with no English and is in Grade 6; one girl from India and she is an 8th Grader; and two girls from Mexico in the 8th Grade.

In this lesson the students had a least three exposures to the content and vocabulary to be learnt. First there was the reading of the story about 'Baldy'. Power Point presentations were used to illustrate the story being read. Next the teacher used Flash cards to show a word and put the corresponding picture above it. In the next section of the lesson, the students had to divide a page into two columns. They were shown a picture card and write the equivalent English word in one column and the word in their own native language in the next column. A game was played to further consolidate the words learnt that afternoon. The game consisted of placing all word cards and picture cards randomly, faced down on the table. Each student would take it in turns to choose a card. They then need to find the matching picture. If they did, they score a point and keep the set. In their next turn, if they remembered where the word/ illustration is on the table (NB all the cards are faced down. Each student already had a turn in opening a card) they can keep the set and he/she can have another go.

In Social Studies, the students learnt the States of America by singing and playing a game. They sang together first. Then the teacher tossed a fluffy ball, if they catch it they have to name a state in the USA. The States in the USA were reinforced by the teacher calling out a name, and each student had to spell it on their own individual white-board, which they held up for the teacher to check once they have finished. This was most affirming and gave immediate feedback to the student. Students were involved with the lesson and helped to put things away and they have also learnt social skills such as taking turns.

Accelerated Learning at Daffron Elementary School, Plano, Texas

There were three students in the Newcomers' Class at Daffron Elementary school: one boy is from Thailand, with no English background, and two brothers from Guatemala (limited English and had attended private school in Guatemala with one hour English per week). This researcher observed two AL lessons (Maths and Social Studies).

Learning Maths the AL Way

First, the class revised their 8 times table with the help of flash cards. Next, the class viewed a lively rhythmic rap video clip on 8 Times Table. The children joined in the singing and dancing, using their body intelligence to help internalise the learning. Next, the students were introduced to the mathematical concepts of Fractions as follows:

1. Teacher puts on a CD on Fractions but because the singing was is too quick, the teacher wrote the introductory text and vocabulary associated with Fractions on to an overhead transparency. The teacher reads the text and sings the chorus and acts out the passage:

   Fractions are in interesting
   Fractions are fun
   I like fractions in rain or in the sun
   Numerators on the top
   Denominators down
   I use fractions all round the town

   The students sing and imitate the teacher's actions and were thus involved in the presentation/Discovery phase of the Accelerated Cycle of Learning.
2. In the next stage of the AL Cycle, the teacher and students used the floor in the class. With the help of flash cards she introduced the vocabulary words and concepts of mixed numbers, equivalent, percentage and improper fractions.
3. For further assimilation and understanding of the mathematical concepts just learnt

above, the teacher introduced a hands on activity . All three students were seated at a table this time and the teacher asks, "Why do we use Fractions? and began showing them a picture of Fraction Sundaes . The teacher then, explained to the class what they had to do?

Students cut out the sundae dish and as many scoops of ice-cream on coloured paper as they wished. They then taped the scoops of ice cream on to their sundae dish.

Students then described the sundae in fractions answering the following questions: How many scoops of ice-cream does it all have? The number will be the denominator of your fractions. How many scoops of each favour does your sundae have? Those numbers will be the numerators of your fractions. List all the fractions on your sundae dish. Then top off your sundae with a red construction paper cherry. Whilst the students were working, environmental music was played. Their work was handed in for assessment.

4. This lesson on 'Fractions' concluded with the teacher asking the students to think of fractions when they go home…" think of everything in relation to fractions, for example there is a total of five flowers n the vase, what is the fraction of the red carnation in relation to the total" (class-teacher, 2008). This is the final phase in the Accelerated Learning Cycle (called the Integration Phase) where the learner thinks of what he/she has learnt and how the new learning could be applied outside of the classroom.

This researcher was impressed at the seamless transitions as the teacher moved from one activity to another. All three students were fully engaged and fully participating and interacting with the teacher and appeared to be having fun. In fact, one of the Guatemala boys said that he used to go to a private school in Guatemala where he has an hour of English per week. This researcher asked him which school was better and he said, "Here, it is fun and music. In Guatemala, it is just read and paper work"

The teacher in this class says that there is minimal homework but the kids are suppose to do some tape reading at home utilising the Crosby Reading or Power Reading Pac. Home reading involves the student listening and following the recorded reading 2 – 3 times then he/she would read it aloud to someone else. After the reading, some discussion and comprehension may follow.

Assessment of progress is made through observation by the teacher on how the kids apply and use the words introduced. The teacher in this class asserted, that from her experience, the more the students read, the faster they will progress, as at this young elementary stage, children's minds are still so open to learning (class teacher, Daffron Elementary, personal communication, January 14, 2008)

It appears that the AL method can accelerate the learning of the English Language and is able to motivate students to want to read more as it introduces vocabulary in a fun and very natural way. Moreover, the AL method capitalises on experiences that the youngsters are familiar with; and concepts and new words are being integrated into their memory bank through the use of music and hands-on activities.

When the Maths lesson ended a short snack time was given to allow the students to unwind. They ate their snack in class and were allowed to continue to work if they wished.

Learning Social Studies the AL Way : The Layers of the Earth

Preparation for learning about the layers of the earth involved the teacher wearing a hard yellow miners' helmet. She took out a rock and allowed the student to feel the rock.
Teacher, "It is hard, can the rock be liquid?"
Children responded, "Yes!" and the teacher showed the class a bottle of water which can be frozen hard. (NB. each action and word adds to the students' vocabulary) The 'layers of the earth' was taught in this way:
Teacher shows globe: Centre is the CORE
Around the Outer Core is liquid
Outside it is the mantle which is both liquid at the bottom and hard at the top
Next, the Teacher shows an apple cut in half. The centre is coloured to represent the core, the white flesh represents the mantle and the green skin represents the crust.

An Active Concert or (First Reading) followed. The music chosen for the reading was Eine Klein. Students were given text to follow and as the teacher read, she would pause and encourage the students to fill in the word she missed reading. She read expressively: eg: shivers with her hands and voice when she came across the word Earthquake

In the Passive Concert or Second Reading, Baroque Adagio music was used. This time the students were asked to dim lights, and they were given permission to lie on their desks whilst the teacher read the passage again. When she finished reading, the lights were turned on and using a Woosh Ball, students were asked what words or ideas they remembered. Each student had to say something when they receive the ball.

Further Assimilation and Integration of vocabulary on the layers of the earth followed with the teacher inviting students to, "Come along and learn with me, come and learn with me"
Students sat on the floor. Teacher unpacks flash cards of vocabulary words with the meaning and illustration of the word. The teacher says the word, puts the card down along with the meaning and its illustration:

> Fault, mountain, earthquake, continental drift, rust, lava, mantle, core, volcano, magma, hot spot , lava.

Most of these concepts are taught at the Year 10 and 11 Geography in Australian schools but at Daffron Elementary school, third Graders in the Newcomers Program are being exposed to the vocabulary of geomorphology which is quite astonishing.

The students next played a game: Teacher throws a dice to work out who is going to be first , second or third in turn. The first person goes out. The group picks out a word from the exposed flash cards on the floor and calls,

"Come in", the student who comes in must work out what was the missing word from the exposed flash cards on the floor. The game continued with the next person going out. In the second and third round, the student had to find two missing words. When the game is finished, the teacher wraps up the lesson by having the students repeat all the vocabulary words associated with the layers of the earth and its movement, as she packs away the cards.

For final consolidation, the class used hand movements and sang about the different layers of the earth. Thus far, for the past hour, the students have had participated actively in at least six exposures to the language and content related to the layers of the earth.

The lesson will be further internalised the following day with a practical activity which will be, making a model showing the layers of the earth.

All the 3 students started the program at the end of August 2007. Tony the Vietnamese boy had no English background but is now (16 weeks later) speaking very well. The other two boys had limited English but they too, are reading and speaking fluently, but above all, they all seem to be enjoying their learning, which is rich and stimulating. They were fully involved all the time. The two lessons just described, took about 2.5 hours but time just seemed to flow seamlessly as the teachers moved the kids from one activity to another with ease and confidence. She appeared be to like a "mother hen looking after her chickens" always encouraging and affirming, without raising her voice the whole of the 2.5 hours this researcher was present. The students in turn, responded with ease and confidence

The students in the New Arrivals Program are in there for only one year but this researcher was told that, using the AL method, the students are using English words from Day one: eg; "Good Morning", What is your name? and within approximately 10 days they were speaking in English. If one reviewed the methods used as above, it is not difficult to understand why the students are learning so quickly: the environment is supportive and stimulating, the teachers exudes confidence and is encouraging and affirming. The learning is fun, using songs, actions and games. The teacher cleverly scaffolds the steps students needed to learn and consolidate their understanding of the words to be learnt The students sees it as all fun and not just work or as one of the students says, it is not just "read and paper work."

Assessment is mostly via observation on how the students have used and applied the words. This according to the teacher, reduces the stress of pen and paper tests which are kept to a minimum so as to have documentation to further validate their observations on a student's progress.

Based on these observations of English Language teaching to new arrivals in the three schools visited by this researcher, it would be fair to conclude that the Accelerated Method is a superior and successful method of language teaching. In many conventional schools known to the researcher in the United Kingdom and Australia, students often battle to learn a language for at least four years and would still hesitate to converse in the foreign language with confidence. The Accelerated Method encourages confidence (and more learning!) as the facilitator motivates the students to move from one stage to the next , learning through games, music, visuals, using their hands to make things, to write, draw and moving from their desks to the floor and, at the same time, having heaps of fun. Time passes so quickly that the learners did not even notice it because they were enjoying themselves so much.

Learning Maths using the Quantum Method

Introduction

Quantum Teaching is described as," ...the orchestration of learning in living colour...It factors in the connections, interactions and distinctions that maximise the moment of learning. (DePorter, Reardon and Singer-Nourie, 1999, p. 3). Grounded in educationally-sound principles such as Lozanov's Accelerated Learning techniques, Multiples Intelligences(Gardner) , Neuro-Linguistic Programming (Grinder and Bandler), Quantum Teaching is said to be able to "...weave the best of the best into a multi-sensory, multi-intelligence, brain-compatible package, boosting teacher's ability to inspire and students' ability to achieve" (DePorter et al. 1999, p. 4)

Spillane Middle School, Houston, Texas

Spillane Middle School is in its third year of existence. The school was named after Carolyn Stamm Spillane a former assistant superintendent for curriculum, director of instruction, associate campus principal and maths teacher who has been very active on campus assisting with maths intervention and mentoring.

Total enrolment at the school of boys and girls in 2008 is 1565 with 71% being white Americans, 5% Asian, 9% African American, 14 % Hispanic; 6% of the population are students with special needs.
Asked why Quantum Learning (QL) was chosen as a mode of curriculum delivery at Spillane Middle School, the Principal, Mr. Gary Kinninger has this to say," As the building Principal, I am all about change in order to bring forth higher levels of student achievement. Several years ago, my wife in the role of elementary district-wide

math-helping teacher for the district, I had the opportunity to learn of QL. I begged for QL to be introduced into the secondary area. My wishes came true and since then, it has been nothing short of wonderful!" (Kinninger, personal communication, 30th December, 2007) In fact, Mr.Kinninger is very proud of his school's achievement. In 2007, Spillane Middle School was given a Gold Performance acknowledgement for Attendance and was commended for the school high achievement in Reading, writing and Social Studies.
According to the Principal, the standard at Spillane Middle is above the district average (Kinninger, personal communication, January 22nd, 2008). Data for the TAKS (Texas Assessment of Knowledge and Skills) for Spillane Middle School compared to the rest of Cypress-Fairbanks Independent School District is shown below:

TAKS (Texas Assessment for Knowledge and Skills) Spillane Middle School

SPILLANE MIDDLE SCHOOL 2007 TAKS Results Percent of All Students Meeting the Passing Standard										
GRADE	READING		MATH		WRITING		SOCIAL STUDIES		SCIENCE	
	SCHOOL	DISTRICT	SCHOOL	DISTRICT	SCHOOL	DISTRICT	SCHOOL	DISTRICT	SCHOOL	DISTRICT
6	98%	93%	87%	81%	-	-	-	-	-	-
7	94%	87%	89%	79%	97%	94%	-	-	-	-
8	96%	92%	83%	75%	-	-	97%	92%	89%	77%

Source: http://schools.cfisd.net/spillane/profile_spil.htm#taks

According to Ms Christina Hoover, Chair of Maths at Spillane, much of the staff is trained in QL methodology with the majority of the teachers coming from the Maths and Language departments. Within the last year, QL became open to other subjects. There is a committee of trained QL teachers at Spillane. The committee serves as an implementation team. The committee also do book studies on QL strategies and often meet to share implementation ideas (C. Hoover, personal communication, 19th November, 2007). In terms of preparation time, the principal of the school said that all teachers have a daily content planing period in which they plan and prepare lessons with members of their grade-level team and/or entire department.

The difference in the delivery of a Maths lesson compared to a conventional maths class in other schools is seen in a Geometry class where a group of students consisting of three classes (about 70 plus students) met in the gym and learnt the main characteristics of thirteen geometrical shapes. The learning was facilitated by one teacher whilst the other class teachers were sitting close by to help with supervision. Dressed in beach coloured Hawaiian shirt and complete with sun-glasses, deck chair, beach bag, headphones, cassettes (and a joke was made of this as tape cassettes are not the 'in thing' with youngsters these days!) the facilitator recalled a story of how she went for a holiday on the beach with her parents.. as the story unfold, geometrical terms were introduced, the students had to identify the terms and note them on the handout given , define its meaning in one column and draw a picture of it in the next column. For example in the story,"... there were triangular kites up in the sky. There were 180 of them. "the facilitator would ask the audience, "what kind of kites?" The students' response "Triangular" was one of the key words they had to note in their worksheet. As the story unfolded, she went to look for her friend Polly, but Polly was gone, and they thought she was a kind of a straight-laced girl."... the word the students had to note here was Polygon. As each geometrical word in the story was dramatically clarified, (in the teacher's actions and tone of voice) the students followed with enthusiasm, they watched attentively, listened to what the facilitator had to say and used their imagination because it is a story in a context that they are all familiar with.. going to the beach. So QL is about entering the students world through experiences they are familiar with, once this is established, the teacher brings them (the students) into her world and her understanding of the content and concepts she has to share with and teach them.. This is the Prime Directive of Quantum Learning, "Theirs to Ours, Ours to Them" (DePorter et al, 1999, p. 6).

When the story was finished, the facilitator reviewed the story again and gave hints on the geometrical words the student had to identify and record on their worksheet. Time was given for them to complete the worksheet. They were to ask their peers if they missed a couple of words and to revise them for a test the following week. Students also had to complete homework on squares, trapezoids, scalene triangles, polygons, circles, hexagons, trapezoids, parallelograms etc concepts they had just learnt during the lesson to consolidate their understanding.

This researcher had the opportunity to speak with some students in their homeroom. The Year 6s said that there was more work in secondary school but was also more fun. The Year 8 students in the same home group said they love the story telling in the Quantum classes as stories helped them to remember better. The students' enjoyment of learning in this school is reflected in the wonderful display of their work in the classrooms and in the warm ambience, created in every classroom with the use of incandescent lamp stands. The ceiling fluorescent lights were not used. Studies by Krimsky, Dunn and Dunn indicate that students relax, focus and actually perform better in low-light situations. Brighter lights, especially fluorescent lights tend to create restless and fidgety learners (cited in Jensen, 1995, p. 60). Every classroom also had similar, stimulating pictures and affirmative posters. According to Ms. Hoover, Chair of Maths at Spillane, similarity of pictures used in each class-room, helps to create consistency within the school both in terms of behaviour and for reinforcing concepts taught. Affirmative posters in particular, help students strengthen their beliefs about learning as they internalise the words on the poster (eg. "I am Winner"). Indeed, the high academic standards that characterise Spillane Middle school in the last couple of years, can be attributed to the introduction of Quantum Learning techniques. Spillane Middle school is very fortunate to have a Principal who believes that the Quantum Learning Model would increase the quality of learning and teaching in his school and he has results to prove it.

Accelerated Learning Schools visited in the U.K.

Introduction

The schools visited in England were Stamford High School in Ashton-Under Lyne , a town in the North east of Manchester; and Cramlington Community High School located approximately 14. 4 kms north-east of Newcastle-on-Tyne. Accelerated Learning as practised in both schools basically follow the Alite 4-Stage cycle invented by Alistair Smith of Accelerated Learning in Training and Education (Alite) in Buckinghamshire, England. Alite's Learning Cycle is part of a program called *Learning to Learn (L2).* The authors of the program have packaged this program around three modules, identified as Knowledge, Attributes and Skills that are needed for the 21st century learner. In this section of the report, a brief explanation will be given of Alite's Learning model, how the model was integrated into the school curriculum and an examination will be made of its impact in both schools visited.

Alite's Accelerated Learning to Learn Model

Ailite's 4- Stage Accelerated Learning Cycle is illustrated in the diagram below:

1. CONNECT

4. CONSOLIDATE

2. ACTIVATE

3: DEMONSTRATE

Alite's 4-Stage Accelerated Learning Cycle

Explanation of Terms in Alite's Accelerated Learning Cycle

1. Connect : In this first phase of the learning cycle, the facilitator attempts to make the learning personal to the learner by connecting it to a previous lesson learnt or connecting it a contextual experience that the class is familiar with. Students also need to see how the lesson fits into the Big Picture as some students cannot learn effectively if they are unclear about the expectations, activities and assessments that may be required and how the lesson will benefit them. The Connection Phase is also about managing the emotional climate of the class so that every individual and group feels included

2. Activate: In this second phase of the learning cycle, the facilitator introduces an activity within the lesson using a range of senses (visual, auditory, kinaesthetic and if appropriate, taste and olfactory senses) as recall and retention improves significantly if learning is multisensory. The activity should also allow for learner choice and as much variety as possible to cater for al learning styles.

3. Demonstrate: This is where the learner is given the opportunity to show what they have learnt. During this phase, students could be given the opportunities to generate products to demonstrate their understanding. Students should be given a choice on how they demonstrate their understanding. This could be an oral presentation, a model, a poster a role-play etc. This is also the part of the cycle where it is student-centred, highly interactive and rich in opportunities for educative feedback.

5. Consolidate: In the final phase of the learning cycle, the facilitator provides the opportunity to reflect on what has been learnt (the content) and how the students have learnt (the process) , and how their new learning can be applied elsewhere and in different situations. It is to be noted that the consolidation phase is not a plenary session, good teaching always involve constant reviewing and re-capping throughout the lesson.

The Learning cycle is used as a vehicle to deliver all learning experiences. It is to be delivered in a positive learning environment eg. stimulating peripherals on walls where students feel safe and welcomed, as any level of stress will lead to anxiety which can inhibit learning and higher order thinking. Weaved into the Learning to Learn (L2) package are five complementary dispositions or attributes that Smith and Lovatt (n.d.) believe must be developed, as they are essential for individual lifelong learning. The "5Rs" are in effect, tools for survival especially in a world that is rapidly changing. The five dispositions are Resilience, Responsibility, Resourcefulness, Reasoning and Reflectivity. A resilient student will 'stick at it' especially when the going is tough. He/she has a positive attitude, finds interest in what they are doing and sets achievable goals and targets. Being resourceful means knowing what to do and where to go when one gets stuck. The resourceful learner uses his/her imagination, learn in different ways ask good questions and takes risks. Being a responsible student means looking after oneself and others. He/she knows right from wrong, gets on with the job and takes time to hep others. Reasoning means to be able to say which is better and why. He/she considers all evidence, chooses the best option and work it through. The reflective learner learns from experience, asks “Why?” , stays calm, listens to different opinions and learns from mistakes.

As mentioned earlier, other features of Alite’s Learning to Learn (L2) program include learner knowledge and learner skills. The following points on learner knowledge and learner skills are extracted from Alite’s *Learning to Learn* booklet (Smith and Lovatt, n.d., p. 8) for the reader’s ease of reference.

Learner knowledge include finding out the:

- Circumstances of learning – when and where it occurs and the lifestyle choices related to it
- Methods of learning- how a learner prefers to engage with the experience and how to identify references
- Social construction of learning- with whom learning occurs and the influence others can bring to the experience
- Motivation for learning – why bother learning?
- Model of learning- how the *L2* learning model works

Learner skills include practising how to:

- Locate and sort information – recall, locate, collate, sort
- Organise and make sense of information – classify, explain, relate, compare
- Judge the worth of information – interrogate for bias, assign value, establish criteria, explore consequences
- Transfer information – re-frame, hypothesise, focus on outcomes, contuct arguments
- Innovate- ask questions, apply anew, adopt and adapt, imagine

Smith and Lovatt believe that the Accelerated Learning program as contained in their L2 package, provides,”… a solid base of knowledge about learning, draws out individual learner attributes through a series of carefully structured challenges and provides opportunities for learners to demonstrate transferable skills” (n.d., p.9).

Accelerated Learning and Learning to Learn at Cramlington Community High School

Background

Cramlington Community High School in Northumberland, north east of England, serves mainly the small town of Cramlington. It has a student population of 1662 aged 13-18 years most of whom have come from one of four local middle schools. At least 53% of the students stay on to do 'A' Levels and 47% of its students would leave to go on to a Trade School or College. About 90% of Cramlington's Six Formers end up doing further studies at tertiary level (Lovatt, personal communication, 7th February, 2008). One of the key features of the school is its integrated use of ICT into teaching and learning. Since the school became a specialist science college round about 2002, extra funding has enabled Cramlington to fit interactive whiteboards into every classroom. The school has a network of PCs and there is Broadband Internet access from all classrooms. There are three full-time professional web designers employed at the school. These technical specialists work alongside staff to help them prepare high quality lessons using ICT resources, on-line digital media and other electronic learning materials. The IT specialists also ensure that electronic resources are available in a very accessible format for staff and students usage. The purpose of introducing a very accessible ICT network was mainly to help teachers teach and students to learn independently.

In September, 2000 a very "basic" AL-L2 course was introduced to Cramlingon. It was timetabled for one lesson per week for every two weeks, using staff and rooms "that were left over" (Lovatt, personal communication, 7th February, 2008). Although, it was "quite superficial at first, it was a step in the right direction" (Lovatt, personal communication, 7th February 2008) as there were enough significant results to warrant the school being awarded the status of a "Leading Edge School' by the office of Public Services Reform in the United Kingdom. Hence, by 2003, a decision was made to introduce AL/L2 "properly". Staff were consulted and given the choice of whether they wanted to be part of the program. At this stage, a significant amount of time was given to the delivery of the program. In fact, AL-L2 was given the same status and the same amount of curriculum time (4 lessons per fortnight of 75 minutes duration each) as the traditional subjects like Maths and Science. No longer was the program delivered in the "spare rooms" in the school but rather in a specially designed 'Discovery Zone' converted from an existing building. The Discovery Zone contains large spacious rooms, for film production, floor space with cushions, rooms with semi-circular work tables with computers to enable students to work interactively with ICT and their peers. There are interactive Smart boards and access to digital cameras and MP3S for taking pictures and recording of sound or voices. Students are encouraged to develop an awareness of their preferred learning styles and to use this awareness to work more effectively. The students are trusted to use all the ICT equipment that is available responsibly, and the facilitator is at hand to provide assistance if they needed it. The Principal, Mr. Wise, supported by his Deputy, Mr. Lovatt and a strong management team are determined to strive towards being "a world class school epitomised by its innovative approach which puts teaching and learning at its core and combines the best form of teaching and learning with ICT" (Planning for Transformation, 2006).

Training of staff and lesson planning

The Deputy Principal, Mr. Lovatt is the person mainly in charge of the training of staff. However, as Mr. Lovatt has rightly pointed out, it is the Principal, Mr. Wise who is ultimately responsible as he is the person who has the vision and foresight to invest money into learning that is transformational for the school and the community. There is a core group of 14 teachers experienced in the teaching of the L2 program at Cramlington High. This group of teachers came to be, as a result of teaching the program discreetly for the last 7 years. Since then, Mr.Lovatt has added another two to three teachers to the core team each year. So presently, there is a team of 25 teachers (25% of staff) who have been teaching or have an understanding of the L2 Program. According to Mr. Lovatt, teachers in the core team are now beginning to "seed" the program into their own subject areas.

It needs to be stated here, that whilst the L2 program was previously just taught as a discreet subject the school has in September 2007 launched its L2 program through the Humanities course using topics such as 'Communications', 'Global Citizen' and 'Living Cities'. In these topics, students are encouraged not only to explore issues related to the topics, demonstrate their understanding and present their ideas using the latest technology and L2 skills but they are also expected to be looking at how their '5Rs' (that is being resilient, resourceful, responsible , reasoning and reflective learners) could be utilized and further strengthened. By 2009, it is hoped that every teacher will not only be a teacher of their own subject but also a teacher of the L2 course. Teachers will be expected to look at ways and processes of how they will teach their students to be better learners within their subject area.; for as Mr. Lovatt asserted, giving students the opportunity to do group work is not the same as teaching them to do group work better (personal communication, February 7, 2008).

Each year there is a three day induction program for all staff including Heads of Department, and those working in IT area. Three months into the term, newly qualified teachers in the school are taken away for an all expenses paid week-end at a hotel where L2 program of skills and tools are revisited. There is also a newly qualified teachers' program where first year teachers get to master basic class-room practices. In the second year, as the newly qualified teachers become more confident, they would be given professional development in more sophisticated methods of teaching and learning.

All staff members at Cramlington have access to a wide range of high quality programs, coaching and electronic resources to help them become more effective teachers. All lessons are prepared using an electronic standard template which includes introductory information; higher order thinking skills; Outcomes to be covered; demonstration of new learning; review and the '5Rs' or attributes to be targeted. With technical support, all lessons are linked to suitable websites or other electronic resources. Teachers' lesson plans are available through the school intranet so that the material can be easily accessed by teachers teaching the same topic thus allowing for consistency and coherence of approach; students too, can access the lesson plans for revision either from school or home. This is especially useful if they have been absent for a particular lesson.

The school finishes at 2.15 pm on a Wednesday. From 2.15 -4.15 staff either have a training session or they work collaboratively in their faculty areas designing lesson plans or schemes of work. There was little objections from parents for early closing as the school took the trouble to explain to parents that staff needed the time to prepare lessons so that their children will benefit. and early closing on a Wednesday is the only option to give teachers the much needed preparation time.

To keep abreast of pedagogical developments there is a Research and Development (R &D) group consisting of a dozen teachers (voluntary commitment). The R&D group is led by the school's Advance Skills teacher and the job of this group is to scan the educational horizons and bring back to the staff any new ideas or practices that may be worth trying out in the classrooms. The school also produces a high quality newsletter on teaching skills for circulation among its staff members. Further, there is another staff member who has been given the special role of researching how changes and new developments in IT can impact on teaching and learning in the school.

Impact of Accelerated Learning to Learn program at Cramlington High School

In May 2006, Ofsted (Office for Standards in Education) inspected Cramlington High and awarded the school a Grade 1(Outstanding in all areas). Summary data obtained from the Direct Government website for School League tables in the UK (2007) show that the aggregate[1] result for tests in the core subjects areas of English Maths and Science for Year 9 students achieving a Level 5 or above was 239 out of a possible maximum score of 300. Data for the previous years are shown in Table 1 below, alongside the performance of students of a similar age in the Local Authority and at the National Level:

Table 1

Aggregate results of KS3 (Year 9) students for English Maths and Science at Cramlington High

Year	Cramlington High	Local Authority	National
2004	235	222	210
2005	224	222	217
2006	239	232	222
2007	239	230	223

[1] Aggregate result is a straight forward system that takes into account how the school is performing in the three core subjects: English, maths and science. The percentages of pupils at the school achieving level 5 or above in these subjects are added together; making the maximum score for any school 300 (School Performance Summary, 2007)

It can be seen from Table 1 that the number of students who have achieved a Level 5 or above in Year 9) have been consistently higher than students of similar age in the Local authority and at the National level.

A study of Table 2 below, shows that the percentage of students who obtained Grades between A-C at GCSE level (Year 11) at Cramlington High are way above the figures attained at the Local and National Level. Although a variety of factors (such as the environment, the type of students, family background etc) can affect overall results in any school, the unique program at Cramlington High must have contributed in no small way to its consistent academic results achieved over the years. Mr. Lovatt, the Deputy Principal has emphasized that the Accelerated Learning to Learn Program at the school is not a "raising attainment strategy" and believes that, "if you can teach students to be better and more successful learners, they will learn more, learn better and consequently will attain better" (M.Lovatt, personal communication, February 7, 2008)
Another valuable measure that will help substantiate the results achieved at Cramlingon is to look at its Value Added figure. Value Added shows how well a school helps children to progress by comparing them to similar children across the country. The Value Added for GCSE students at Cramlington is very high at 1024.2 (in 2007) with a coverage indicator of 97%.[2] So, whatever the rationale for the AL Learning program at Cramlington, the outstanding results achieved cannot be denied. In fact, the Ofsted report in May 2006 described teaching at Cramlington as "very good or Outstanding because the teaching has a sharp focus on how individual students learn and think'. The report continues: "Units of work and individual lessons are planned and shared across the whole school through the intranet. The high quality lesson planning always includes a range of strategies which prompt students to be more involved and to think more deeply about their own learning.' (Cramlington High School Profile, 2006).

Table 2

Percentage of students who attained 5 or more Grade C or above at GCSE and equivalent (Year 11) Exams.

Year	Cramlington High	Local Authority	National
2004	73%	56.2%	53.7%
2005	76%	58.8%	56.3%
2006	83%	61,7%	58.5%
2007	82%	46.3%	46%

In terms of students' behaviour, Lovatt said that the Accelerated L2 program has helped to reduce challenging behaviours as students recognised the value of the learning tools taught (M. Lovatt, personal

[2] Coverage indicator determines the accuracy of the value added measure by considering the percentage of students it covers.

communication, February 7, 2008). Lovatt further says that the program helped to level- off negative behaviour, because the school tracks students' progress in the 5Rs and teachers speak with the students about being responsible, resilient etc. "… we are introducing them to a language that they can understand and this helps" (Lovatt, 2008). Another teacher said," I buy into the program and I am convinced of its positive impact because I 've witnessed how a badly behaved student has turned around because of the things he learnt in the AL Learning to Learn program" (K. Brenchin, personal communication, February 7, 2008)

Thus the study at Cramlington shows that the Accelerated Learning to Learn program had a very positive impact on academic achievement and behaviour. It is interesting to note however, that whilst the puristic Lozanov model of Accelerated Learning consistently employs the use of music, particularly Baroque, music as a variable was not mentioned in Cramlington's programs. In fact, Lovatt points out that music is only used ad hoc or whenever, the teacher thinks it appropriate.

Accelerated Learning at Stamford High, Ashton-Under-Lyne

Background

Stamford High School is described by its Deputy Principal, James Inman as a "typical inner city school" with a student population of 541 students (boys and girls) , most of them coming from very disadvantageous homes. Stamford has been called the "Stamford Zoo" where even good teachers found it hard to teach, students were leaving because they were bored, not learning and frightened and standards of attainment from the school was very low and there was high staff turn-over(Inman, J & Watson, D. 2006).

In 2003, led by its former Principal, Paul Hacques, a decision was made to change the culture of the school targeting three specific areas : Attitudes to learning, Behaviour to Learning and Quality of teaching and Learning. In the beginning, teachers trialled a program from the south of England, but abandon it after 3 months as the needs at Stamford were very different from the school for which the program was written. They later bought Alite's Accelerated Learning to Learn program and adapted it to suit the needs of Stamford. To facilitate implementation of the program, members of staff were given opportunities to visit other schools such as Cramlington to see how the AL-L2 program works. There were "residential weekends" where teachers were trained in the program. They were also given time- off to prepare lessons using the 4-Phase Accelerated Learning Cycle. The Humanities Learning Area was the first faculty to integrate the L2 Program into their lessons. Others in the staff had the opportunity to watch these L2 lessons and give the teachers feedback. The program is also taught discreetly. In Year 7, topics in the L2 program include 'How I learn best'; Stamford 5

Rs; Introduction to L2 (which would include skills on how to organise, plan, work in teams) and The Accelerated Learning Cycle.

The discrete teaching of the AL-L2 program takes place in a special refurbished room with plenty of floor space. Students use bean bags in this room and are expected to leave the room tidy when they leave (this is about taking responsibility, one of the 5Rs). The L2 room contains stimulating posters and students' work and there is also an interactive white board. In 2007, a PACE (Personal Active Creative Education) program, using a thematic approach (eg. What the Future holds for Me?") which included Learn to Learn tools was introduced to the Year 7s.
All teachers use a standardised template for lesson preparation as in Cramlington High. The lessons are linked to the web and electronic resources. These lesson plans are also available and easily accessible through the school intranet. There is IT support although on a much smaller scale compared to the one in Cramlington. Students have access to computers in the lab and in the library. Some classrooms have access to the wireless network using laptops that are kept in a cabinet to recharge after use.

Classes observed by this researcher

This researcher observed two Accelerated Learning to Learn lessons at Stamford High. One was on Team Building and what it means to work in a group; The other lesson observed, was on organisation of information and memory. Both lessons were taught in the L2 classroom, students sit on bean bags, moved around and cooperated with each other, listened carefully to instructions and to their team members and appeared to be enjoying their lesson. Students in the Year 7 PACE lesson were working on a project on "Destiny" which required them to find information of different religions and to be able to present their information in Power-point to their class. Every two students in this class had access to a wireless laptop. Everyone was on task and the teacher said that sometimes she would play soft Baroque music when the students are working or reading.

Impact of the Accelerated Learning to Learn Model at Stamford

On entering the campus this researcher noticed the friendly students and staff. It did not appear to be like a "zoo" as was described. Speaking with members of staff, this researcher was told that students are "…definitely more confident and can come and speak in front of a class without feeling embarrassed. Our key issue was the lack of engagement, but now students are more engaged and finding school more enjoyable" (AL Learning to Learn teacher, personal communication , February 6th 2008). Mr Inman, the Deputy Principal said, "…we teach them life long skills that are important to them for the future, we talk to them about their aspirations. It is really about changing their mindset, their attitudes and these have improved enormously. It all boils down to teaching. Before, teaching was more didactic, there was more disengagement, boredom and

behavioural issues. Now the students are engaged in more active learning. There is more group work, some type of movement and lots of learning in small bits"
(J. Inman, personal communication, February 6, 2008).

This researcher was shown round the school by two Year 10 students and the manner in which they conducted themselves was exemplary. They spoke confidently and maturely and do the school very proud. It is unbelievable that behaviour was described as being very bad at Stamford three years ago, before the introduction of the Accelerated Learning to Learn program. These two students were in fact, chosen to speak at a L2 Conference where they spoke to a crowd of nearly 200 people on their experiences of the program at Stamford.

Speaking to a group of Year 10 students, this researcher was told that the AL Learning to Learn tools just "come naturally" to them now, as they have learnt them in Year 7 and got to practise them in class. They know when to apply the tools in other subjects. They said that in Primary school it was basically reading, writing and getting knowledge; but now "it is more fun, more kinaesthetic we get to move about."

When asked what learning tools they would to apply to learning for an exam? They said that it depended on what learning style one had. One student said that because he was a visual learner, he uses cartoons a lot. To another question on how would they know they have been more responsible? One student said that his responsibility is to do his school work. How much time he spends on it depends on the piece of work. He said that there are extra classes put on after school for example, Spanish at twenty to four; and he is staying behind as teachers are available to help him. This indeed is a reflection of this student's level of responsibility and it does appear that he wants to do well.

In terms of the impact of the Accelerated Learning to Learn Model on academic achievement at Stamford High, aggregate results of students who achieved a Level 5 (Year 9) for Maths, English and Science show that except for a 'dip' in 2005, results have indicated improvement for the last two years as can be seen on Table 3 below:

Table 3

Aggregate results of students achieving a Level 5 KS3 (Year 9) or above in English, Maths and Science at Stamford

2004	**2005**	**2006**	**2007**
97	93	125	135

Table 4

Percentage of students who attained 5 or more Grade C or above at GCSE and equivalent (Year 11) Exams at Stamford

	2004	**2005**	**2006**	**2007**
A-C	37	43	45	41

Table 4 above, shows an improvement in the number of students who attained 5 or more Grade C or above at GCSE since 2004. According to Mr. Inman, results have improved because of the AL Learning to Learn program and also because the courses at Stamford have changed to become more Vocational and therefore more suited to the needs of the students a the Stamford.

In summary, based on observations, analysis of primary data collected from actual visits to the two schools and a study of academic results of Cramlington High and Stamford High, it can be said that the Accelerated Learning to Learn Program has been a powerful tool in influencing behaviour and the positive academic results achieved in both schools. Very importantly, the students are enjoying learning and enjoying school.

Final Conclusion

A number of lessons can be drawn from this investigation of Accelerated Learning and Brain-Based Learning in schools in Canada, USA and in England:

1. The application of Accelerative Learning and teaching techniques can be successfully applied in a naturalistic environment of schools and not only in controlled laboratory situations or in tertiary establishments as was the case in earlier experiments completed by Lozanov and earlier researchers on Suggestopedia and Accelerated Learning. This finding supports work by Yoon (2005) who completed a study on the application of an adaptation of the Accelerative-Suggestopedic Method in the naturalistic environment of a secondary school in Western Australia.

2. Children learn best in a stimulating, safe and stress-free environments and when individual learning styles and the multiplicity of intelligences are catered for.

3. The inclusion of thinking tools, problem solving skills and other life skills into the Accelerated Cycle of Learning, as in Alite's Accelerated Learning to Learn program, has enhanced the quality of the AL Model of

Learning, validating work by Yoon (2005) that the direct teaching of cognitive tools, not only provided the catalyst for improvement in learning (Yoon, 2005, p. 285) but will also equips students with the tools and that extra leverage to become independent and life long learners.

4. Further, the inclusion of the 5Rs, (Resilience, Responsibility, Resourcefulness, Reasoning and Reflectivity) has made the Accelerated Learning Model, a more holistic model as it considers not only learning for academic improvement that is, to be a better and more successful learner, but also learning to improve ones' personal attributes. This is significant, because one of the goals of education is to educate the whole person.

5. Consistency and predictability were important elements in the application of Acceleratedd Learning strategies in all the schools visited. In Spillance Middle School, consistency was achieved with all classes having the same learning posters on their classroom walls, one facilitator would teach a unit of work to all the classes to avoid confusion. In Cramlington and Stamford High electronic standard templates were used in the preparation of themes of lessons and these lessons are hyperlinked to quality resources. The lesson plans are available to all teacher and students, so everyone is clear of what is to be expected. This substantiate Allen-Waters (2005) study which pointed out that students' confidence increase when they clearly know how lessons will be delivered, what will be taught and how they will be assessed. Allen-Waters (2005) further asserted that schools with a predictable approach tend to perform better, have greater levels of community trust and have a happier environment of staff and students (Allen-Waters, 2005, p.14).

6. The Accelerated Learning method infused with its clearly identified vocabulary, content and activities as practised in the Newcomers' centres in Plano, Texas was highly effective and successful in the teaching of the English Language.

7. Finally, a critical factor that underpins whole-school implementation and successful practice of Accelerated /Brain-Based Learning in schools is the inspiration, vision and energy of a strong leader who has an understanding of what is real learning and what it takes to make the curriculum relevant for young people in order, that they may be adequately prepared and empowered to be successful citizens in a rapidly changing world. A skilful leader knows how to muster all the different components in a school system to work together synergistically to achieve the desired outcomes. This means enough resources are put into staff professional development and adequate time is given to staff to allow them to reflect, learn and work together collaboratively, to review and prepare lessons that will ultimately benefit the children they teach.

Recommendations

1. The Accelerative Method of learning especially when embedded with cognitive learning tools and other skills such as time-management and study skills is a cutting-edged model that needs to be widely adopted in the Australian Education System so that young people can:

   a. be empowered and become independent and successful learners who will not only enjoy learning in school but are prepared for a lifetime of learning
   b. become confident and responsible individuals who lead healthy and fulfilling lives and become people who can contribute positively to the world in which they live.

2. Implementation of the model needs to be a whole school approach to ensure sustainability and support from all sectors of the school community. A whole school approach will also help to ensure consistency of practice which as discussed earlier, helps to increase students' confidence that will ultimately lead to improved results and in general, a more congenial school environment.

Implementation and Dissemination

i. Share findings with my own College community and help develop plans for whole school implementation of the AL Cycle of Learning if needed
ii. Provide workshops and training sessions for fellow professionals and educational leaders through the Catholic Education Office and Association of Independent Schools in Western Australia
iii. Written report will be made available to the International Alliance of Learning for publication and circulation to its members.

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