



Tigray Development Association (TDA)

Tigray Education Bureau (TEB)

Thinking Schools Ethiopia

Growing Thinking Schools Inside Out

Empowering Young Girls: Building Communities

36 schools • 3 schools from each of 12 Woredas

1-3 Woredas from each of the 7 Tigray Regional States

Tigray Development Association • www.tdaint.org

Thinking Schools Ethiopia • www.thinkingschoolsethiopia.com

Thinking Schools International (global) • www.thinkingschoolsinternational.com

Thinking Foundation (research) • www.thinkingfoundation.org

Thinking Schools Ethiopia Model School Implementation

36 Model Schools: 3 schools in each of 10 Woredas — 1-3 Woredas from each of the 7 Tigray Regional States

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Cover Letter: Thinking Schools Ethiopia Model School Implementation for Empowering Young Girls: Building Communities Partnership with Initiative Africa

***36 Model Schools: 3 schools in each of 10 Woredas
1-3 Woredas from each of the 7 Tigray Regional States***

To Whom This May Concern

Tigray Development Association (TDA) in support of Tigray Education Bureau (TEB) and in collaboration with Thinking Schools International (TSI) seeks funding to implement the Thinking Schools Ethiopia (TSE) pilot approach for 36 government schools in 10 Woredas in the 7 Tigray Regional States for the 2014-2015 school year.

In June 2014 eighty (80) experts from the Tigray Education Bureau and Tigray Development Association were charged with the assessment of the Thinking Schools International / Ethiopia approach in a two day training held in Mekelle, Tigray. The training was facilitated by a TSI global trainer and 2 TSE certified country trainers. The TEB expert team's positive assessment of the approach for Ethiopia along with TDA's affirmative assessment has led to the development of the accompanying technical proposal, budget and timeline for the implementation of the pilot school phase of Thinking Schools Ethiopia / Tigray. The technical proposal seeks funding to support TSI expertise, TSE certified country trainers and training local expertise to successfully implement the approach. Additionally, the proposal includes action research to build a culturally sound body of research for reflective practices and instruments to measure the quality of Thinking School's educational practices. The local expertise would include two local teacher's colleges in collaboration with the Tigray Education Bureau.

The funding for the first phase would provide:

- support for the 36 pilot schools;
- support for developing local expertise as certified Thinking Schools Ethiopia and International trainers;
- action research with the initial phase;
- trainings for leadership teams, whole staffs and ongoing school-site training;
- blended professional development with video of demonstration lessons in Tigray schools for use with all schools;
- global collaborations with other TSI initiatives including schools in UK, USA, Malaysia (whole country project), South Africa and other countries.

The following overview includes an overview on how Thinking Schools Ethiopia supports the desired outcomes for Empowering Young Girls: Building Communities; background information on Thinking Schools Ethiopia and Thinking Schools International, and an accompanying implementation plan with budget.

Dr. Taddele Hagos

Executive Director • Tigray Development Association

Thinking Schools Ethiopia:

Empowering Young Girls Building Communities Overview

Thinking Schools Ethiopia (TSE) supports teachers, educational leaders, whole schools, educational bodies, communities and countries who are committed to developing 21st Century learning and thinking environments for girls, and all learners, using research documented, student-centered models with proven impact across the globe. Implementing highly effective pathways for thinking through a transformational, sustainable, whole school/systems approach to learning is the foundation of TSE. TSE provides student/learner centered models that can be applied across all disciplines and grade levels in schools (Pre-K; K-12; university), with all student populations, and for life-long learning.

This proposal includes:

- an overview of Thinking Schools Ethiopia
- research on Thinking Schools success with secondary girls and a direct connection to success in the university
- implementation of pilot schools as a foundation for sustaining and developing whole region implementation and success



Thinking Schools has specifically demonstrated its ability to positively impact the achievement levels of girls and learners, in general, across whole schools. The focus of the grant, Empowering Young Girls: Building Competence, Confidence and Community is connected to the research on girls' success in high school, and continuing in university.

The goals in this project as stated in the request for proposals are:

1. Improve school environment to encourage high school girls to pursue and complete high school education.
For education in school to be effective, the environment needs to be conducive to learning, allowing the students space and time to interact within the learning and teaching process.
2. Improve high school attitude and performance of young girls.
This grant aims to improve attitudes towards mathematics and problem solving in order to improve performance of high school girls in these areas.
3. Reduce gender-based violence against female students in schools and improve school discipline.
Violence in schools is a pervasive, highly emotive and, above all, global problem.
4. Assist young girls to develop entrepreneurship skills to support their professional development.
The principles of entrepreneurship demand innovation, organization, planning and execution.

Thinking Schools Ethiopia focuses on key pathways that aim at the professional development of teachers to improve the quality of their pedagogy and decision-making, and successfully bring a student centered quality thinking education to girls and the whole school environment including:

- Thinking Maps - visual mapping
- Reflective Questioning
- Collaborative Learning
- Dispositions

Thinking Schools Ethiopia:

Empowering Young Girls Building Communities Overview

Measurable Outcomes for Thinking Schools Ethiopia Empowering Young Girls:

- Improvement in girls academic performance
- Increased motivation and participation by girls using observations, pre and post
- Perception change in teachers over time as to the ability of girls
- Increased time during classroom of girls speaking
- girls assuming more leadership roles
- Equality when working in collaborative groups
- Perception change in male students over time as to the ability of female peers



There is a large body of research on how each of the above methods contributes to quality education for students. A recently published book, *Pathways to Thinking Schools* (Corwin Press, 2014) includes a chapter on the well-documented success of St. Cuthbert's School, a large (1500) all girls school (K-12) in New Zealand. The entire chapter is included in the appendix. An abstract (in italics) of the chapter follows:

The methods used at St. Cuthberts, a guiding pioneer of Thinking Schools International, are the pathways of Thinking Schools Ethiopia. Prior to training and sustaining the Thinking Schools methods, St.

Cuthbert's students (all girls) scored adequately at the secondary level with national tests. This success did not transfer when they went to university. The school had the following guiding questions and views on how they wished to achieve higher academic success with a quality education for their 1500 girls:

What kind of learners do we want to produce in this college? What behaviors, attitudes, skills, and knowledge would they have? We agreed that we wanted our students to become adults who were lifelong, independent learners, who approached life's situations and problems positively and persevered to find resolutions and answers.

The school were concerned that their students were:

dependent learners: students who had excellent recall skills, who were prepared to read and study hard, but whose work was careful, methodical, and pedestrian rather than original, inventive, and risk-taking. This idea was supported by the fact that many good students gained fine marks of around 75% to 85%, but relatively few broke into the 90th percentile at the university scholarship level.

The school then developed a guiding 'journey' to increase their all girls school success:

First, we made a list of all the qualities such a learner would have. What developed from this was the conviction that effective learners are good thinkers who have a range of internalized strategies they can use to do their work.

Thinking Schools Ethiopia:

Empowering Young Girls Building Communities Overview

The staff then decided:

to introduce Thinking Maps through a three-year implementation cycle, by first teaching the use of Thinking Maps explicitly within noncurricular contexts. We chose this method of introduction since research (Perkins & Salomon, 1989) revealed that cognitive skills are not automatically acquired unless they are taught explicitly. This was a formal approach carried out by everybody—expected, planned, and agreed on by staff.

After Thinking Maps were introduced, the other key pathways for their success as a Thinking School included:

- dispositions training for developing open minds;
- reflective questioning methods for developing high quality questioning and shared inquiry amongst teachers and students;
- collaborative learning for developing independent learners.

The pathways are part of an integrative whole school, learner-centered model.

The outcomes from what began 15 years ago and sustains today:

reflecting the inherent rigor and flexibility of Thinking Maps and the empowering nature of the change process that was allowed to mature naturally over time. The learning outcomes for our students based on fundamental thinking processes and learning approaches have been remarkable. Academic results in New Zealand's national league tables have risen consistently, with the college a national academic leader, placing 1st or 2nd in New Zealand in every senior external examination category for the past 5 years, up from 12th at the start of our evolutionary process. We have also seen improved results on international tests and PATs (reading, listening, and comprehension tests), the high level of acceptance and approval from students and parents, and the continued use of double processing using the maps and linear writing from our students who now attend universities.

Yet the most powerful outcome has been the move to collaborative and interactive classrooms where students—and teachers—are confident to discuss their learning and to learn from each other. We now know that students are much more willing to share their work with the class when it is developed visually, collaboratively, and through a flexible, common language for thinking that is the foundation for the evolution of our community. And, as teachers and school leaders, we are able to work deeply in our own content areas, with focused collaboration in teams. After 10 years, we are still living the never-ending ebb and flow of change and thriving as an evolving school as a home for the mind.



In June 2014 eighty (80) experts from the Tigray Education Bureau were brought together by the Tigray Development Association. They were charged with the assessment of the Thinking Schools International / Ethiopia approach through their participation in a two day training held in Mekelle. The training was facilitated by a Thinking Schools International global trainer and 2 Thinking Schools Ethiopia certified country trainers. The Tigray expert team's positive assessment of the student-centered systemic approach for Ethiopia along with Tigray Development Associations affirmative assessment has led to the development of the accompanying technical proposal, budget and timeline for the implementation

Thinking Schools Ethiopia:

Empowering Young Girls Building Communities Overview

of the pilot school phase of Thinking Schools Ethiopia / Tigray Education Bureau and the specific goal of addressing the needs of secondary school girls. The technical proposal seeks funding to support training local expertise with guidance from TSI expertise and TSE certified country trainers to successfully implement the approach. The proposal includes action research to build a culturally sound body of research for reflective practices and instruments to measure the quality of Thinking School's educational practices. The local expertise would include Ethiopian professionals from two local teacher's colleges and the Tigray Education Bureau.

The Thinking Schools approach provides an equal opportunity for all students regardless of gender to develop their thinking skills for mutual understanding of themselves and peers, and as a foundation for lifelong success. This is accomplished through the use of research-based methods that develop skills modeled and used by leadership and teachers — the same methods that are used in classrooms by students with thinking and problem solving.

The funding for the first phase would provide:

- support for the 36 pilot schools;
- support for developing local expertise as certified Thinking Schools Ethiopia / International trainers;
- action research at all pilot schools with the initial phase for developing a reflective process, and method of assessment and evaluation;
- trainings for leadership teams, whole staffs and ongoing school-site training;
- blended professional development with video of demonstration lessons in Tigray schools for use with all schools in Tigray and other regions;
- global collaborations with other TSI initiatives including schools in UK, USA, Malaysia (whole country project), South Africa and other countries.

The pilot schools are strategically selected to equally represent all school levels and the whole Tigray region as a foundation for expansion for the second phase. Details of the pilot school implementation are explained in a more extensive technical proposal.

Further research and documented outcomes with Thinking schools International and Ethiopia methods accompany this proposal:

- University of Exeter report on the Evaluation of the Impact of the Thinking School Approach (2012) surveying 27 accredited Thinking Schools and 35 non-accredited Thinking Schools
- Rochester Grammer School, an all girls school, report on the implementation of Thinking Schools methods over a multi-year period, and the resulting positive outcomes leading to accreditation and greatly improved outcomes.



Thinking Schools Ethiopia Model School Implementation

36 Model Schools: 3 schools in each of 10 Woredas

1-3 Woredas from each of the 7 Tigray Regional States

Thinking School Training - Year 1

Thinking Schools Ethiopia training begins with leadership team training (6-8 from each school) using the Thinking Schools pathways to thinking methods to develop an understanding of the methods (for leaders, teachers and students) used as life long learners and as a foundation for whole school change. The first trainings will be model schools representing the whole school system in types of schools and location of schools with three schools from each zonal administration (2 primary, 1 secondary). The initial Growing Thinking Schools Inside Out training builds capacity for each school leadership team to understand and lead their respective schools. Thinking Schools Ethiopia trainers will support the leadership teams and whole schools at each step of the process. Specific focus will be given to visual tools (Thinking Maps®), collaborative learning methods including community exercises and collegial coaching; reflective questioning; and designing a thinking environment. Support with schools includes regional trainings and regular monthly support to each of the schools by a certified Thinking Schools trainer. Additional support will include DVDs of best practices that are video taped and produced locally of the model schools.

Thinking School Training - Years 2 & 3

Thinking Schools will continue to support the pioneering model schools while expanding the initiative pragmatically throughout the whole education bureau schools. The model schools become examples of best practices while logically expanding the approach to all schools. Regional trainings of specific pathways will also continue to expand (e.g. Thinking Maps®; Collaborative Learning; Reflective Questioning; Dispositions; Designing Environments)

Thinking School Training - Sustaining

In addition to the expanding model with all schools, capacity of trainers will continually be built from within the system. Administrators and teachers from the Tigray region will continually step into the roles of trainers and leaders of the initiative. Additionally they will become active participants of the greater country and global Thinking Schools network.

Evaluation and Documentation

The Thinking Schools Ethiopia implementation of whole school change with Tigray schools will be documented through video and print for the purpose of learning, sharing and growing the whole school change. This will be accomplished with the use of video, DVDs, posters reflecting whole school change and best practices, and Internet with progress of the initiative.

Outcomes for Teachers

Teachers will become proficient and experts with all Thinking Schools pathways and methods for use with students, for use with planning, in collaboration as a whole school thinking language and method, and be leaders for whole school learner centered change.

Outcomes for Empowering Young Girl

Young girls will become proficient and experts with Thinking Schools methods for all disciplines and subjects of their school work. They will be prepared in a student centered approach providing them with real life use of the thinking methods for school work and for life long problem solving skills.

Outcomes for Administrators and Leadership

Administrators and school leaders will become proficient with all Thinking Schols pathways and methods for modeling to teachers and students as a leadership tool and as practical whole school methods that are practiced and used by the whole school including teachers, students, support staff and the greater school community.

Outcomes for the Community

Students who are proficient in the Thinking Schools methods become more productive thinkers, doers and members of the whole community supporting all aspects of the community including health, family, business and life.



Accreditation

The Thinking Schools Accreditation Process (TSAP) offers an opportunity for schools to engage in a systematic, collaborative, enquiry process. The framework for accreditation is based on 5 Key Areas for Reflection and 15 Criteria (www.thinkingfoundation.org/tsa) representing the vision of directly facilitating thinking as a foundation for early childhood through adult education and for nurturing all students as global citizens. A local Ethiopian university (e.g. Mekelle University) would be the accreditation partner with Thinking Foundation for the Tigray region. The local Ethiopian university is both the guide for the process and dissemination of submissions — regionally, nationally and globally.

A member of the Ethiopian university accreditation team certified by Thinking Foundation serves as a guide for each school. As a school community begins the process, artifacts are collected toward the creation of a school wide TSAP Portfolio. Ultimately, the school submits a Thinking Schools Portfolio for review, publication and web based distribution to others in the Thinking Schools Network around the world. Depending on the planning and development of each school, the process may take between 18 months to several years to complete. Advanced accreditation is also offered in order to sustain the evolving practices and vision of each school.



Thinking Schools Ethiopia Model School Implementation

36 Model Schools: 3 schools in each of 10 Woredas — 1-3 Woredas from each of the 7 Tigray Regional States

2 Elementary Schools + 1 Secondary School in each Woreda

What is Thinking Schools Ethiopia

Thinking Schools Ethiopia (TSE) has been collaborating with educators and schools in Ethiopia for the past three years using thinking methods that are learner (student) centered life long thinking skills for all students, teachers and leadership in the whole school community.

Thinking Schools Ethiopia (TSE) is a student / learner centered approach providing thinking methods for all disciplines and grade levels in schools (Pre-K; K-12; university) and as a life long learners. Specifically the focus of Thinking Schools Ethiopia is using the **Starting Points for Thinking** research based methods including:

- **Questioning for Inquiry** high quality questioning and shared inquiry;
- **Visual Mapping** the use of visual tools to map out ideas. (e.g. **Thinking Maps**);
- **Collaborative Networking** - collaborative learning; collegial coaching and community building methods;
- **Developing Dispositions** characteristics, dispositions, and Habits of Mind;
- **Designing a Thinking Environment** considering how the physical space is organized & resources are used.

The Starting Points for Thinking are life long skills for use with problem solving in school, life and work for students, educators, school leaders and parents.

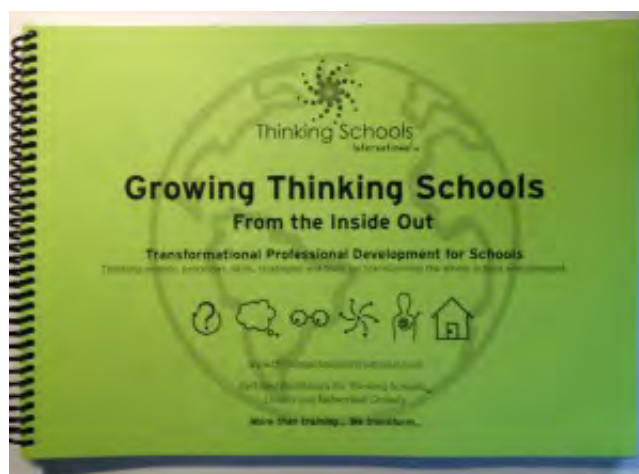
Why

Thinking Schools methods are a whole school transformational design that require minimal materials for implementation and use. What is needed are school leaders, teachers and students immersed in understanding and using **the starting points for thinking**. An example is Thinking Maps® which are visual cognitive mapping for organizing thinking. The goal is patterning the mind with thinking methods. Thinking Maps® can be used on paper, on the ground with chalk, in dirt with a stick, etc. The important aspect is knowing the cognitive process (e.g. sequencing, cause and effect, etc.) and being able to create the appropriate map. Please consult the TSE website blog for examples of using Thinking Maps in a rural Ethiopia setting on the ground, in Ethiopian government schools and other Ethiopian and global locales.



"This training is a pilot project. We will train teachers and principals. Gradually the program will be at a national level. Let alone your job or other businesses, it helps even in our day to day life [Thinking Schools approach and methods]..."

*Dilamo Otore Ferenje
Head of Addis Ababa Education Bureau*



How

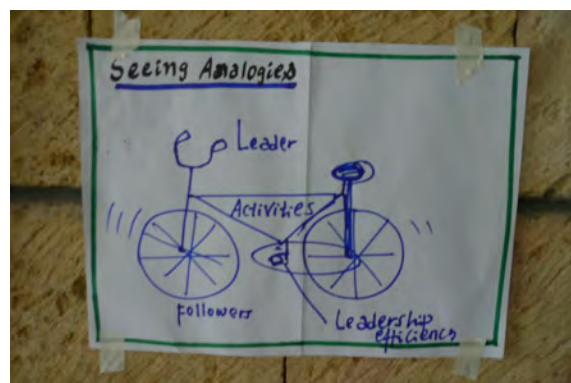
The TSE model school Initiative will be implemented in a practical sequence. This began with training the Tigray education expert team and will now be expanded to 21 pilot schools.

- leadership teams from each school (8 participants) from all twenty one model schools will participate in a 2 day TSE Growing Thinking Schools training.
- Each of the twenty school's leadership teams will receive twice monthly on-site support from TSE trainers collaborating with the whole school staff on TSE approach including Growing Thinking Schools training, Thinking Maps, collaborative learning and questioning for inquiry.
- Regular regional trainings for model schools including Leadership Training; Thinking Maps; Questioning for Inquiry; Collaborative Learning; Community Building; Collegial Coaching; Designing Environment.
- Blended professional development model that includes (in addition to in-person training) video, DVD, and phone delivery of training.



Sustainability

The TSE model is implemented in a scaffolding sequence to build expertise and capacity within the whole school and school system. This includes the methodologies as a common way of thinking and the people with their pedagogical practice. In addition to students and teachers, this includes leadership training and parent outreach as a key part of the whole school change of transformational design.

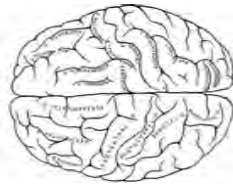
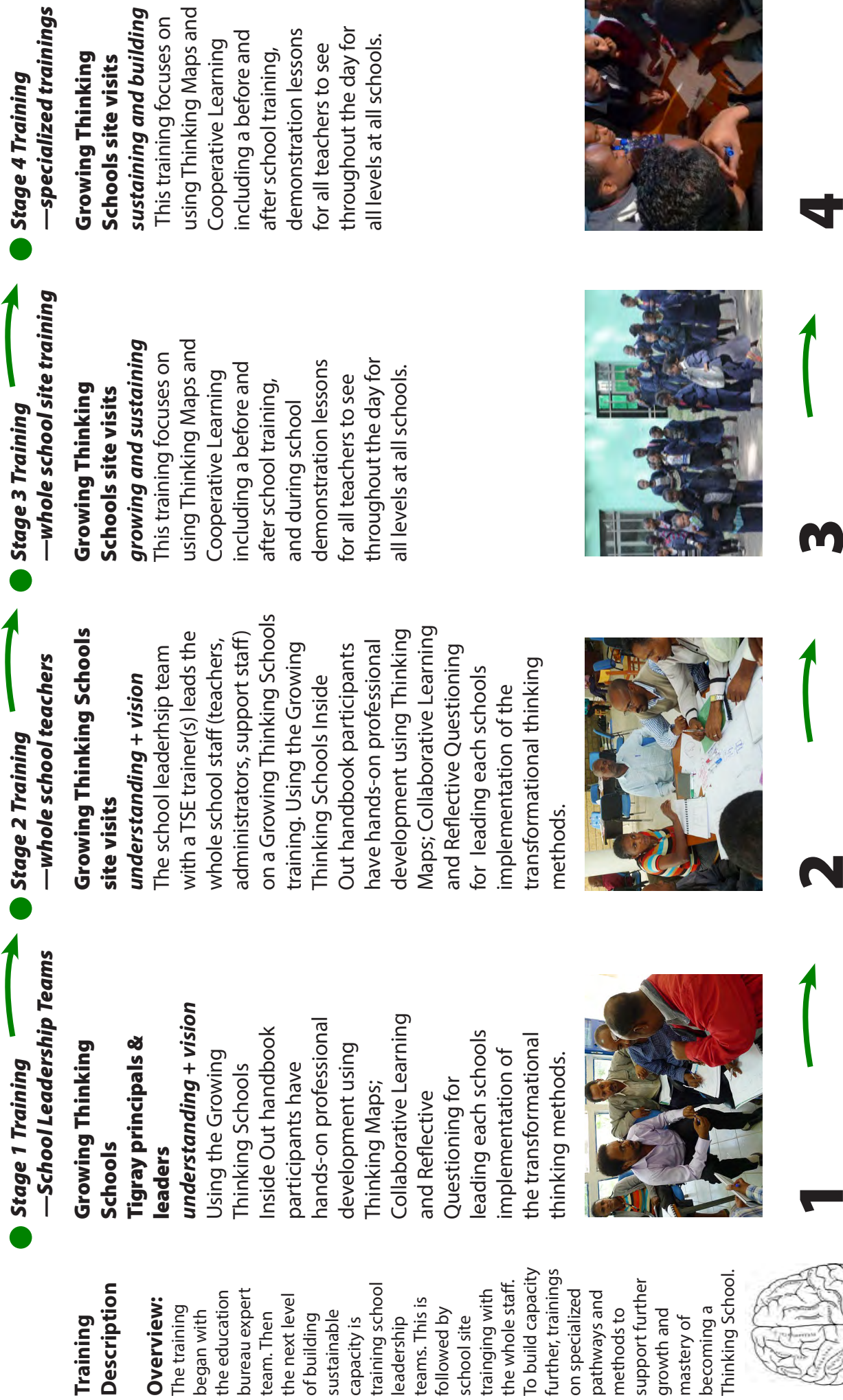


Who

The initial twenty one schools representing the Tigray Education Bureau (TEB) will include three (3) government schools from each of the seven Zonal Administrations for a total of twenty one (21) schools. **Each of the Zonal Administrations will have two elementary schools (including pre-k) and one secondary school.** These schools will then become model schools for the respective Zonal Administrations as the project grows with implementation in all Tigray schools. It is recommended the model schools have leaders and staff who are committed to whole school transformational change. Leaders and staff who see the potential and importance of a learner centered environment that embraces high quality thinking methods for developing students as life long thinkers and problem solvers.



Training Description and Sequence



Training Description and Sequence



Training Sequence	Categories	Leadership Team Training	Whole School Training	Monthly On-Site School Training	Specialized Team Training
Training Details	Duration	Stage 1 Training Oct 2014 • 6 days total 2 full days each group (3 groups) Nov. 1 full day x 3 groups Feb. 1 full day x 3 groups May 1 full day x 3 groups	Stage 2 Training Oct 2014—Nov 2014 2 full days training / group Training at each Zonal Site 3 schools / Zone	Stage 3 Training Nov. 2014—Sept.. 2015 ongoing twice monthly school site support(2*10*36=720 days)	Stage 4 Training Nov—Oct. 2015 10 days for 5 different trainings
	Who	Instructional Leadership Teams (8 leaders and lead teachers / school)	Whole schools	Whole School	TOT Training for Lead Teachers from the 21 Schools
	Title	Leadership Session-Training of hands-on participant centered learning of methodologies	Whole Staff Training At Zonal Sites	On-Site support staff at the school sites	Specific Trainings: Thinking Maps-3days Collaborative Learning-2days Reflective Questioning-2days Action Research Structuring Environment
	Number of Trainees	288 grouped into three representing 36 schools: 2 primary & 1 secondary from each zonal administration	1080 total educators 30 educators from Each of the 36 schools Representing 7 Zones	Whole Teaching and support staff at the school sites	84 participants – 4 trainees representing each of the 21 schools
	Trainers	TSI Global Trainer: —2 for 10 days each TSE Country Trainers: 2 1 TSE Project Director	TSI Global Trainer: —1 for 14 days TSE Country Trainers: 2 TSE-TEB Trainers: 8	TSI Global Trainer: 1 for 21 days TSE Country Trainers: 2 for 100 TSE-TEB Trainers: 8 Trainers for 800 days	TSI Global Trainers: 1 for 14 days TSE Country Trainers: 2 for 14 days TSE-TEB Trainers : 8 for 14 days
	Remarks	Substitute Teachers Needed Use of built capacity			Video: includes demonstration lessons with students, professional development with teachers , school leaders and parents at each school.

5 Year Implementation

Regional	Year 1	Year 2	Year 3	Year 4	Year 5
Mekelle	3 model schools in Mekelle woreda 2 - primary (prim) 1 - high school (hs)	Mekelle woreda 50% Mekelle schools Model Schools continuing: 2 - prim; 1 - hs	Mekelle woreda 100% Mekelle schools Model Schools continuing: 2 - prim; 1 - hs		
Southern	6 model schools in 2 woredas (A,B) 2 - primary (prim) 1 - high school (hs)	woreda (A,B) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools in 1 woreda (C) 2 - primary (prim); 1 - hs	woreda (A,B,C) 50% woreda A schools continuing: 2 - prim; 1 - hs 3 model schools each in woreda D 2 - primary (prim); 1 - hs	woreda (A,B,C) 100% woreda A schools continuing: 2 - prim; 1 - hs woredas B, C, D 50% of schools	woreda A, B, C, D 100% woreda schools
South Eastern	3 model schools in 1 woreda (A) 2 - primary (prim) 1 - high school (hs)	woreda (A) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools in 1 woreda (B) 2 - primary (prim); 1 - hs	woreda (A) 50% woreda A schools continuing: 2 - prim; 1 - hs 3 model schools each in woredas C, D, E, F, G, H 2 - primary (prim); 1 - hs	woreda (A) 100% woreda A schools continuing: 2 - prim; 1 - hs woredas B, C, D, E, F, G, H 50% of schools	woreda A, B, C, D, E, F, G, H 100% woreda schools
Eastern	6 model schools in 2 woredas (A,B) 2 - primary (prim) 1 - high school (hs)	woredas (A, B) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools in 1 woreda (C) 2 - primary (prim); 1 - hs	woredas (A, B,C) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools each in woredas D, E, F, G, H, I 2 - primary (prim); 1 - hs	woreda (A, B) 100% woreda A schools continuing: 2 - prim; 1 - hs woredas C, D, E, F, G, H, I 50% of schools	woreda A, B, C, D, E, F, G, H, I 100% woreda schools
Central	9 model schools in 3 woredas (A,B,C) 6 - primary (prim) 3 - high school (hs) (2 primary, 1 high school each woreda)	woreda (A,B,C) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools in 1 woreda (D) 2 - primary (prim); 1 - hs	woreda (A, B, C, D) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools each in woredas E, F, G, H, I, J, K, L 2 - primary (prim); 1 - hs	woreda (A,B,C) 100% woreda A schools continuing: 2 - prim; 1 - hs woredas D, E, F, G, H, I, J, K, L 50% of schools	woreda A, B, C, D, E, F, G, H, I, J, K, L 100% woreda schools
Western	3 model schools in 1 woreda (A) 2 - primary (prim) 1 - high school (hs)	woreda (A) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools in 1 woreda (B) 2 - primary (prim); 1 - hs	woreda (A, B) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools each in woredas C, D, E, F, G, H 2 - primary (prim); 1 - hs	woreda (A) 100% woreda A schools continuing: 2 - prim; 1 - hs woredas B, C, D, E, F, G, H 50% of schools	woreda A, B, C, D, E, F, G, H 100% woreda schools
North Western	6 model schools in 2 woredas (A,B) 2 - primary (prim) 1 - high school (hs)	woreda (A,B) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools in 1 woreda (C) 2 - primary (prim); 1 - hs	woreda (A, B, C) NEW 10 - prim; 2 - hs continuing: 2 - prim; 1 - hs 3 model schools each in woredas C, D, E, F, G, H 2 - primary (prim); 1 - hs	woreda (A) 100% woreda A schools continuing: 2 - prim; 1 - hs woredas B, C, D, E, F, G, H 50% of schools	woreda A, B, C, D, E, F, G, H 100% woreda schools

Trainers

Thinking Schools International (TSI) Global Trainers - a lead trainer from Thinking Schools International. Robert Seth Price has been a Global Trainer since the inception of Thinking Schools International and a fellow with Thinking Foundation since the founding of the organization by David Hyerle.

Thinking Schools Ethiopia (TSE) Country Trainers are trainers who have been trained and certified by a TSI Global Trainer. Atsed Tsehayou and Dagim Melese have been involved with TSE for 3+ years as country trainers.

Tigray Region Trainers Tigray Development Association will establish an office for Thinking Schools Ethiopia - Tigray in the state capitol of Mekelle. The office will include a full time project director, and contracted trainers for schools. The Tigray trainers will be trained by TSI and TSE certified trainers. The Tigray trainers will have education expertise including experts and professors from the local university teacher colleges and experts from the Tigray Education Bureau (TEB). The goal is to have one or two TSE-TEB trainer for each of the seven Zonal Administrations in the first year for a total of 7-14 Tigray Trainers. In the second year the number of lead trainers will increase proportional to the increase of schools participating with the TSE - TSI - TDA collaboration. Additionally one or both of the university teacher colleges would become a Thinking Schools accreditation organization in collaboration with TDA and Thinking Foundation. See more on www.thinkingfoundation.org/tsa website.

Blended Training is the use of video and DVD to provide ongoing training with all schools. These training video / DVDs will come from regional, country and global sources. Globally SINET will collaborate with content. Locally and country will be a collaboration of TSE/TEB/TDA. Locally the video/DVDs will be developed in collaboration with trainers and a videographer accompanied by a journalist/producer.

Definitions

School Leadership Team Training: The school leadership teams are composed of the school principal, assistant principal, and key lead teachers. Additional stakeholders can be the Wereda leader and/or other key people in the school community. The team is composed of approximately eight participants who become the 'drive team' to lead the whole school transformational change as a Thinking School.

Whole School Thinking Schools Ethiopia Training: Thinking Schools Ethiopia implementation begins with training the Education Bureau experts in the approach and specific methods (e.g. visual mapping, collaborative learning, reflective questioning, collegial coaching, designing environment, dispositions). The implementation process is then:

- training school leadership teams
- school site support from Thinking Schools Ethiopia in collaboration with the school leadership teams for the whole staff training
- regular twice monthly support from a Thinking Schools Ethiopia facilitator that includes demonstration lessons and continuing professional development with the whole school staff
- leadership training continues throughout the collaboration
- specialized trainings in Thinking Schools Ethiopia approaches

Visual Tools for Thinking Training and Guide: The visual tools Thinking Maps are a universal visual cognitive language — eight specific visual patterns. Visualizing our thinking allows us to have a concrete image of our abstract thoughts. Visual representations enhance the brain's natural ability to detect and construct meaningful patterns. Thinking Maps reduce anxiety by providing familiar visual patterns for thinking and working with complex ideas and situations. The guides include Thinking Map's Handbook and Thinking Maps Collaborative Leadership Handbook

Research: "Although thinking is innate and spontaneous, skillful thinking must be cultivated." -Art Costa, The Thought-Filled Curriculum

Questioning for Inquiry Training and Guide: Methods of teachers using inquiry, students developing a strong understanding and use of inquiry and creating a whole school environment of high level use of questioning methods.

Dispositions for Mindfulness Training and Guides: This includes a guide for Dispositions and a guide for Collaborative Networking which includes:

- community building exercises to build understanding, knowledge and collective support
- collaborative learning methods to support and active learner classroom
- collegial coaching to develop pedagogy as part of a collaborative process

Designing Thinking Environments Training and Guide: Thinking Environments, a professional development model, is an awareness, understanding and a process focused upon the design, interface and impact with the environment of the physical learning space.

Action Research Training: Each school will participate with three educators doing action research on Thinking Maps, Leadership and Collaborative Student Centered Active Learning. Funds for the research and a camera will be provided.

TSE-TEB Facilitators Training: This references training with the Tigray Education Bureau experts team whose knowledge supports integration of thinking methods within the curriculum that supports content learning and understanding for the teachers and students.

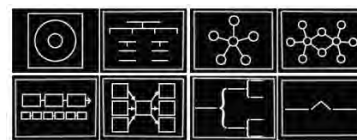
Videographer, Video Editor and Journalist The videographer, video editor and journalist provide support documenting the narrative of the initiative, and create a model of broadcasting the effects of the Thinking Schools Ethiopia initiative within the model schools and as a model for the whole school system.

Participatory Action Research:

The Process: Reflection and Assessment

Participatory action research (PAR) is an approach to research in communities that emphasizes participation and action. It seeks to understand the world by trying to change it, collaboratively and following reflection. Each school will be provided 3 action research grants for either individual educators and/or teams of educators. This will provide insights to what is working, development of best practices, and publishing outcomes as a reflective dissemination of the projects outcomes. The 3 areas of action research for each school will include:

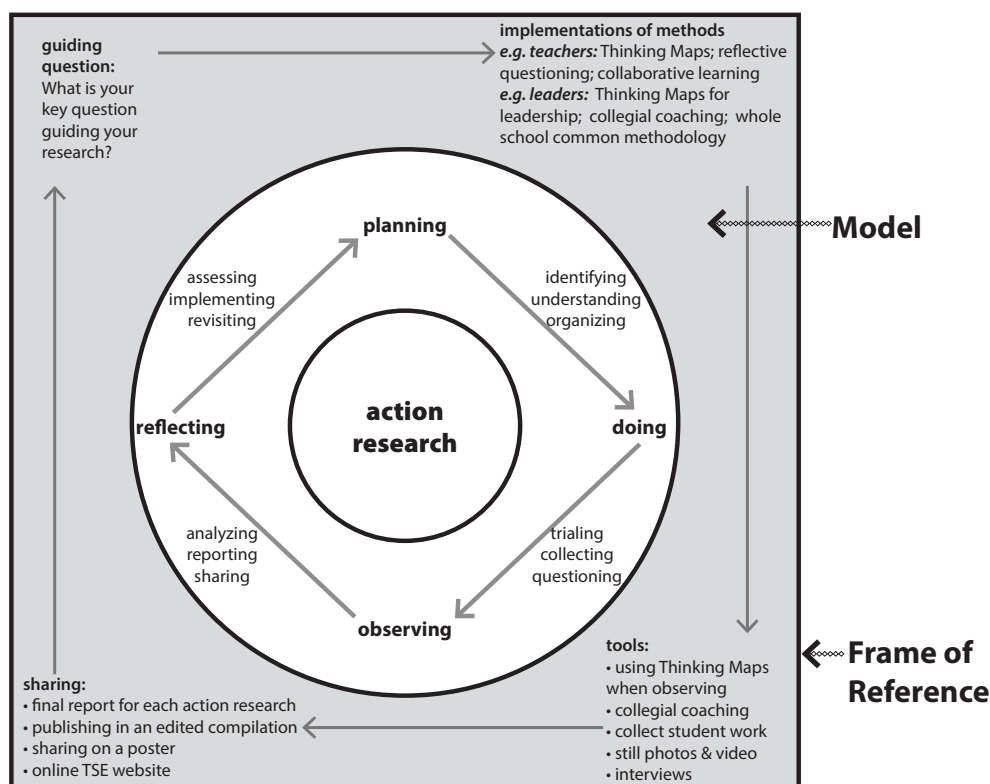
- Thinking Maps
- Thinking Schools for Leadership
- Collaborative Learning



PAR practitioners make a concerted effort to integrate three basic aspects of their work:

- participation (life in society and democracy),
- action (engagement with experience and history),
- research (soundness in thought and the growth of knowledge)

The visual map to the right provides an overview of implementing participatory action research with the Tigray Education Bureau 21 model schools. The core model (circle) and the actual 'how' in the frame (rectangle). This will provide an ongoing assessment while building a body of research to disseminate with the whole Tigray government school system.



Participatory Action Research:

Measurable Outcomes: Reflection and Assessment

Thinking Schools Ethiopia implementation of Empowering Young Girls: Building Competence, Confidence and Community will use specific tools to learn with and from measurable outcomes. Mini-grants for action research will be a key instrument for gathering, using and growing from the measurable outcomes. The following tools and methods will support teachers, and students, becoming more aware of classroom interactions by girls. This will begin by training the teachers in observation skills as part of the action research training.

Action research will be used to determine the following measurable outcomes of girls:

- Improvement in academic performance
- Increased motivation and participation using observations, pre and post
- Perception change in teachers over time as to the ability of students
- Increased time during classroom of girls speaking
- Equality when working in collaborative groups
- Perception change in male students over time as to the ability of female peers

The methods and tools to be used for measurable outcomes:

- Pre and Post Interviews using video as part of action research at each model school with students, teachers, parents, leadership
- Control schools that have not implemented Thinking Schools Ethiopia (TSE) methods as part of the measurable outcomes for comparison with TSE model schools
- Thinking Maps are visual verbal language and will be used to observe changes in patterns of thinking
- Mini-grants for action research to support the use of action research for measurable outcomes as both a self reflective tool and for the whole project

Thinking Maps are important as the key pathway and method to initially use and implement with schools for whole school change and development of equality with girls because:

- Thinking Maps foster collaborative learning
- Thinking Maps are a visual verbal language to organize thinking
- Thinking Maps develop patterns of thinking
- Thinking Maps are a tool to support equality for girls in verbal representation
- Thinking Maps use of the Frame of Reference foster the understanding of each other's thinking
- Thinking Maps are a cognitive language developing life long thinking and problem solving abilities

Mini-grants for action research with all the model schools supports findings of measurable outcomes that will develop a body of understanding and research with Thinking Schools and the Empowering Young Girls: Building Competence, Confidence and Community initiative.



Training - Step 1: Growing Thinking Schools Inside Out Leadership Training

STEP 1 • Who are we? What is a Thinking School? What is a thinking student?

The first step begins with school leadership participating in a three day professional development workshop led by a certified TSI trainer in collaboration with TSE trainers. Each participant is given the Growing Thinking Schools guide (published by TSI: © 2011) that is used during the highly collaborative training and as a continuing resource over multiple years as you expand your focus. This guide is translated for use in different countries.

All participants have access to a web-based extensive resources and activities for immediately improving thinking across your whole school. Specifically, you will have access to activities that engage the 6 Starting Points practiced during the seminar.

Starting Points for Thinking

The leadership learns, practices and understands the focus of Thinking Schools Ethiopia is using the *Six Starting Points for Thinking*, research based methods including:

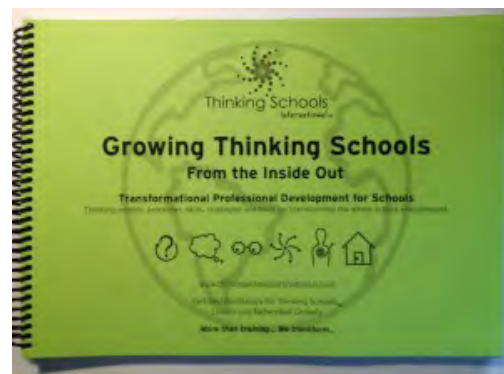
1. **Reflective Questioning** high quality questioning and listening skills (e.g. shared inquiry, questioning for inquiry)
2. **Visual Mapping** the use of visual tools to map out ideas. (e.g. **Thinking Maps**).
3. **Collaborative Networking** between us in pairs, groups, schools, and global networks that includes collaborative learning; collegial coaching
4. **Developing Dispositions** characteristics, dispositions, and **Habits of Mind** are engaged

Why the Same Thinking Methods for Leaders?

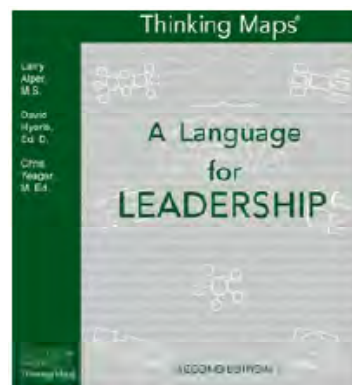
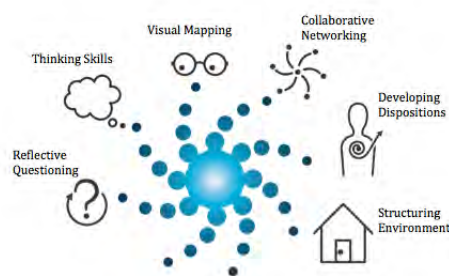
Thinking Maps, reflective questioning, collegial coaching (collaborative learning), action research, dispositions, and building community are life-long thinking skills. Skills and methods we teach children as learners are the same tools we use as educational leaders to lead whole school staffs. The *Starting Points for Thinking*, are both methods and tools for students as well as educational leaders leading their staff.

Training 1

This training, Training 1 with leaders from key Tigray schools, is the foundation for scaffolding the Thinking Schools Ethiopia methods to the woreda levels with school leadership teams, then to the schools sites with the whole school staffs.



co-written by David Hyerle and Robert Seth Price



co-written by David Hyerle and Larry Alper

STEP 2 • Creating an Action Plan

During the Leadership Training, TSI and TSE trainers introduces the Tigray educational leaders to the “big picture” vision of the journey of a “Thinking School” over multiple years. TSI and TSE commit to supporting the leaders and their whole schools vision and plan for Growing a Thinking School—from the Inside Out. The Tigray educational leaders will be systematically introduced to and explore through using the **Starting Points for Thinking**, for developing student thinking and performance, and improving teacher effectiveness as well. The session is highly interactive, learner centered (mirroring student centered approach), practical in methods while global in seeing a sustainable big picture. By the end of the workshop, all participants will experience practical applications of these **Starting Points for Thinking** using different models, approaches, techniques and tools.

STEP 3 Focused Implementation

TSI has discovered over the past ten years that successful school leadership teams that have created Action Plans that have initially focused on one of the **Starting Points for Thinking** are successful. Practical, student-centered methodologies that have a proven, significant positive impact on thinking, learning and teaching. Usually visual tools, such as Thinking Maps® are a logical first method for the leadership used to think and lead, the teachers to think and lead the students, and the students to think and lead collaboratively. Additionally during the initial three day Leadership Training, significant emphasis is also placed on the integration of Reflective Questioning, Collaborative Learning (collegial coaching), Structuring Environment and Dispositions. The emphasis is on Visual Tools for Thinking (Thinking Maps®) which provide a research proven tool that is used globally to see and share ones thinking collaboratively. Focusing on only one Starting Point initially, is essential because we have also discovered that trying to implement a wide variety of tools, strategies, models and techniques is counter productive: it becomes disjointed and overwhelms everyone.



STEP 4 Focused Implementation of Thinking Maps as a Language for Leadership

The third day of the training places an emphasis on the use of Thinking Maps as a Visual Language for Leadership.

Thinking Maps

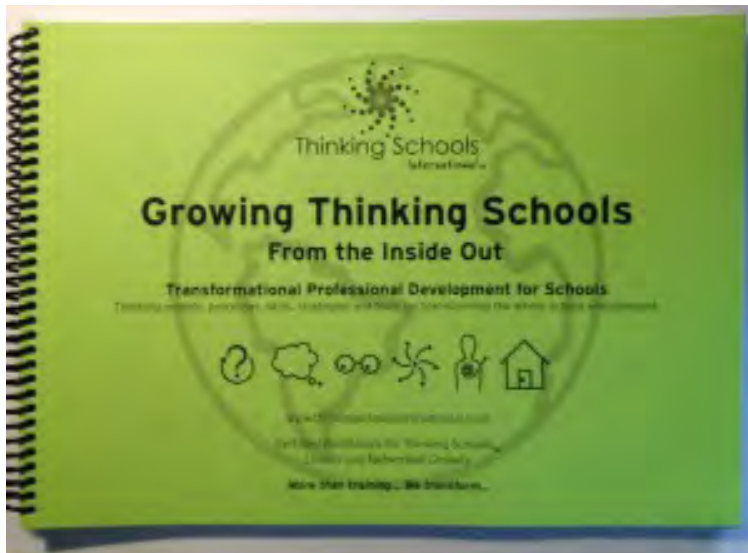
Leadership training includes:

- Understand Thinking Maps and Research Connections
- Use Thinking Maps for Communication and Collaboration
- Use Thinking Maps During Professional Learning Communities (PLC) Meetings and for Problem Solving
- Create an Implementation Plan for Sustaining Thinking Maps at Your School (Ongoing Monitoring and Assessing Using a Rubric)



The Thinking Maps are tools for Educational Leaders to:

- Problem Solve
- Facilitate Collaborative Meetings
- Supervise and Coach (Recruiting, Developing and Retaining Highly Qualified Personnel)
- Create a Shared Vision and Mission
- Develop Your Strategic Plan
- Analyze Data & Monitor and Assess a Thinking Maps Implementation



Participants Working Field Guide

The Growing Thinking Schools Guide includes an interactive 'Working Field Guide' as part of the guide. This section at the end of the guide provides a tool for the leaders to explore their thinking and develop their ideas and plans for implementation.

TABLE OF CONTENTS: Growing Thinking Schools

Participants Guide: Growing Thinking Schools

HOW TO USE THIS GUIDE

PREFACE

TABLE OF CONTENTS

STAGES AND STEPS OF THE JOURNEY

STAGE 1: Getting Started

- Step 1 Who are we together?
- Step 2 Why a "thinking" school?
- Step 3 What is the vision of *Thinking Schools International*?
- Step 4 How are we working together?
- Step 5 What does a "Thinking Student" look like?

STAGE 2: Exploring Pathways

- Step 6 How does "change" happen?
- Step 7 What are some basic pathways to Thinking?
- Step 8 How can we explore these pathways to Thinking?
- Step 9 How do we assess where we are?
- Step 10 At this stage of the journey, what are your priorities?

STAGE 3: Planning the Journey

- Step 11 How are you going to plan for the journey?
- Step 12 How will the transformative designing process be implemented?
- Step 13 What does a Thinking School look like?

STAGE 4: Leading the Way

- Step 14 How are we going to build a Transformative Design for Growing a Thinking School?



Leadership Training: Thinking Maps, Reflective Questioning, Collegial Coaching, Action Research, Community Building

Why the Same Methods for Leaders

Thinking Maps, reflective questioning, collegial coaching (collaborative learning), action research and building community are life-long thinking skills. Skills and methods we teach children as learners are the same tools we use as educational leaders to lead whole school staffs.

Thinking Maps

Leadership training includes:

- Understand Thinking Maps and Research Connections
- Use Thinking Maps for Communication and Collaboration
- Use Thinking Maps During Professional Learning Communities (PLC) Meetings and for Problem Solving
- Create an Implementation Plan for Sustaining Thinking Maps at Your School (Ongoing Monitoring and Assessing Using a Rubric)

The Thinking Maps are tools for Educational Leaders to:

- Problem Solve
- Facilitate Collaborative Meetings
- Supervise and Coach (Recruiting, Developing and Retaining Highly Qualified Personnel)
- Create a Shared Vision and Mission
- Develop Your Strategic Plan
- Analyze Data
- Monitor and Assess a Thinking Maps Implementation

Reflective Questioning

Leadership training includes how to develop thoughtful interpretive questioning methods to help lead whole school staffs become reflective educators seeking the best learning and thinking methods for the whole learning community.

Collegial Coaching

Educational leaders learn to effectively learn with each other through the collegial coaching model. This method supports growing, learning and mastering the art of teaching (pedagogy) providing students with high quality learning environments.

Action Research

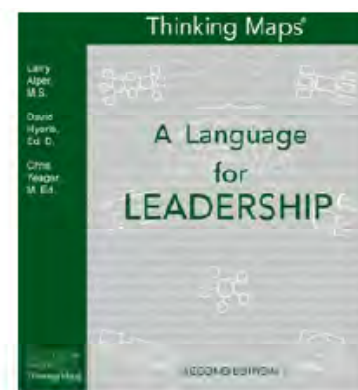
Leadership training learns how action research is a process in which participants examine their own educational practice systematically and carefully, using the techniques of research.






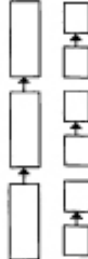


Community Building

Educational leaders learn methods and techniques to develop a collaborative staff (like a high functioning football team) to work together for the whole learning community including the students and educators, and the greater learning community.

Integrative Practices

The above practices are integrative as a systems approach for whole school transformational change.



Essential Leadership Questions	Thinking Processes Facilitated	Thinking Maps as Tools
How are we defining this topic? What is the context? What are our frames of reference which influence our points of view?	DEFINING IN CONTEXT	
Let's describe the topic. Using adjectives and adjective phrases, what are the sensory, logical and emotional attributes present?	DESCRIBING ATTRIBUTES/ QUALITIES	
Let's compare our ideas. Where are the similarities? and differences? How does the present situation compare to our identified goal?	COMPARING and CONTRASTING	
How could we classify these ideas into groups or categories? What are the main ideas, supporting ideas and details in this information?	CLASSIFYING/ GROUPING IDEAS	
Are there any physical, component parts and subparts that we need to analyze?	PART-WHOLE	
What do we think happened? What is the sequence of events? Let's prioritize our solutions and then create a sequential plan of action.	SEQUENCING	
What are the short- and long-term causes and effects of this event? What are the feedbacks in the system? Given our solution, let's predict what will happen over time.	CAUSE-EFFECT	
How is this situation related to other experiences we know? What analogy is guiding our thinking?	SEEING ANALOGIES	

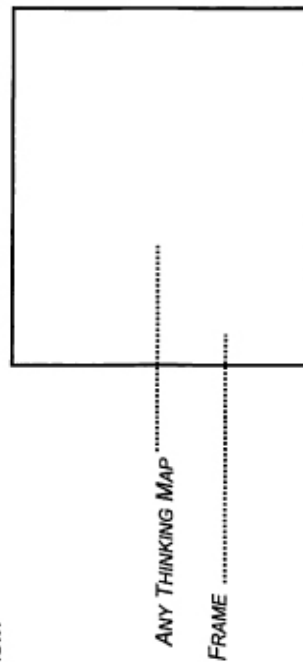
Frame for Frame of Reference

Thinking is influenced by "frames." Frames are our overlapping personal and cultural experiences, values and belief systems. These multiple background frames give reference to and guide thinking, emotions and judgments. Surfacing our "frames" or **mental models** (Senge) enables us to begin to see what influences the evolving patterns of thinking developed in the maps. We more fully appreciate the human dimension of ideas and the diversity within the organization. Each of the maps is a view of one's cognitive pattern. The Frame represents one's **metacognition**, or reflection on this pattern.

The Frame

The Frame is used around any of the eight Maps. After creating a Thinking Map, draw a square "frame" around the map you are using. Within the frame, identify information that shows the influence of background values, experiences and belief systems that influence the map you have created. Sharing this Frame with others often enables conversations to evolve from positional to collaborative. Seeing from another person's Frame is much like stepping into their shoes and seeing their thinking from their point of view.

Figure 2-1



Questioning Using the Frame

Where did you get this information (workshops, books, people, etc.) to support your view?
What prior knowledge and experiences influence your view?
What are the cultural influences on your perspective (age, gender, ethnic, religious, political, geographic, class, etc.)?
What are the belief systems which may influence how you/ others define terms, issues, and/or ideas?
What would be the influences, values and beliefs shaping another person's ideas?

"Leaders as teachers help people restructure their views of reality and therefore to see new possibilities for shaping the future."

Peter Senge
The Fifth Discipline

Training - Step 2: Whole School Training

The training the leadership teams received will be replicated with the whole school staff. The trainings, which will parallel the trainings received by the leadership teams will be a training led by a Thinking Schools Ethiopia trainer for the whole school staff in collaboration with the school leadership team.

Training - Step 3: Monthly On-Site School Training

Schools will receive regular monthly school site visits by a Thinking Schools Ethiopia trainer. This will include on-site professional development supporting implementation of the Thinking Schools model. Demonstration lessons with students will be an important part of the school site trainings. These demonstrations will be video taped to use for training after the site visit.

Training - Step 4: Specialized Thinking Methods Team Training

Specialized trainings include Thinking Maps®; Reflective Questioning; Collaborative Learning, Community Building and Collegial Coaching; Designing a Thinking Environment. These sessions will be held in Mekelle and regionally when appropriate.

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Thank You

Thank you Geoffrey Suddreth, General Manager of Thinking Maps®, Inc.; Chris Yeager, Consultant Director for Thinking Maps®, Inc.; and David Hyerle, creator of Thinking Maps® and founder of Thinking Foundation for providing use of Thinking Maps® with professional development by Thinking Schools Ethiopia (Part of Eminence Social Entrepreneurs, Ethiopia) for school leaders, NGO leaders and educators in Ethiopia. Thank you to Corwin Press and the author David Hyerle for permission for reprinting excerpts from *Visual Tools for Transforming Information into Knowledge (second edition)*.

www.thinkingmaps.com www.thinkingfoundation.org www.corwinpress.com

Systems Thinking

"The word organization is a product of how we think and how we act; [it] cannot change in a fundamental way unless we can change our basic patterns of thinking and interacting."

—Peter Senge

The Learning Organization Made Plain

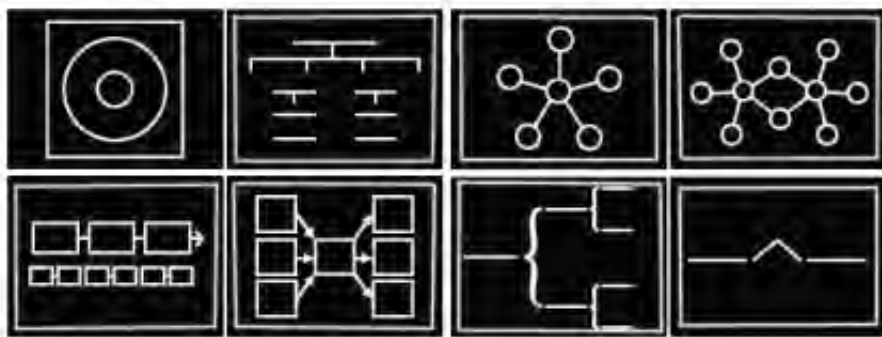
School Site Visit - Demonstration Lesson Example

(Thinking Maps® Example)

*This model would be applied with other **Starting Points for Thinking** methodologies as well.*

Purpose: for whole staff to see how Thinking Maps® are implemented during one school day; create discussion amongst the staff; build a PLC (Professional Learning Community) through modeling and doing; create a video library of implementing Thinking Maps®, developing a collegial coaching model.

Goals: The whole staff will see the success of using Thinking Maps®, be part of collegial dialogues in small groups and the whole school, develop discussion on the use of maps as content and the hows of pedagogy implementing the maps with students. The goal is to have the whole staff engaging and collaborating together.



How: There are three key steps to the Demonstration Lesson Day including a briefing -> lesson -> debriefing

Prior to the demonstration lessons, the TSE facilitator (or other facilitator) meets with the whole staff before school starts to provide an overview of the day. The facilitator engages the whole staff in any questions they have in regards to the implementation of Thinking Maps® using a Circle Map to record their questions and a Tree Map to sort their questions.



Demonstration lessons will replicate the same process 5 times (5 hours total). Each lesson will model introduce a Thinking Map® (whole group, then small group) with age appropriate content that is currently being studied. Each hour will include:

- a briefing (approximately 10-15 minutes);
- the lesson (15 min, 20 min maximum);
- debriefing (15-20 minutes);

The first Demonstration Lesson Day will have the TSE or TSI Facilitator doing the lessons. The second Demonstration Lesson Day will have a teacher leading a lesson with the TSE Facilitator coaching (if needed). The teachers will do a lesson in another teacher's room (not their own children). This model of Instructional Collegial Coaching can continue throughout the year with appropriate scaffolding with use of Thinking Maps®, writing, etc.

The Day:

1. meet with the whole staff before school (described above)
2. one hour block of briefing—lesson—debriefing x 5 throughout one day (described above)
3. meet with the whole staff after school - debrief the day *answering* many of the questions developed with the whole staff in the morning

Structure:

- 10 substitutes would be used for classrooms of participating teachers with coverage
- the classroom of the demo teacher will need coverage too - to be part of briefing and debriefing
- the Facilitator would be in all five demonstration lessons (threads the day)
- video tape the lessons if possible (a student can be the videographer)
- include specialists and support (classified) staff as well provide food at lunch

Appendix 1

Interpretive Questions for Comprehension

This is an excerpt from Reflective Questions training

When exploring any type of text (fiction, non-fiction, poetry) it is important to ask interpretive questions that build upon one another. Interpretive questions are effective both with well planned discussions and in spontaneous situations. Interpretive questions stimulate comprehension, oral language, and written language.

Types of Questions

Factual - A factual question has only one correct answer.

Interpretive - An interpretive question has more than one answer that can be supported with evidence from the text. Interpretive questions keep discussions going and require the reader to refer back to the text.

Evaluative - An evaluative question asks the reader to decide if s/he agree with the writer's ideas or point of view. The answer to an evaluative question depends on the reader's prior knowledge, experience, and opinions.

Writing Interpretive Questions

Well written stories, articles, non-fiction have elements that are interconnected with the various parts supporting one another. An interpretive question can help discover the meaning and relationships between its parts. To start a question include how, what, where, why, and when.

Testing the Questions

- There should be genuine doubt about the answer(s) to the question.
- If a question is open to different possible answers students will be more willing to share their thoughts.
- You should have genuine interest in the question. • Students will 'read' your interest (or lack of) in the question and story.
- The question should stimulate discussion. • The question should create an interest in revisiting the story for evidence.
- The question should be clear. • The participants should easily understand the question.
- The question should be specific. • The question should fit the story and not generic to any story

Here are the basic ground rules for leading a discussion:

- 1 - Participants must have read or heard (read aloud) the story.
- 2 - Discussion is focused on the selection everyone has read or heard.
- 3 - Opinions should be supported with evidence from the story.
- 4 - Leaders only ask questions – they do not answer them.

For a discussion based on interpretive questions to be successful, student interest needs to be encouraged and valued.

Prepared and Spontaneous Questions

To create effective questions and questioning techniques it is very important to develop and test the questions prior to discussing the story with the class. To facilitate quality questions it is beneficial to take notes when initially reading the story. Writing Interpretive Questions provides a template of the types of notes to help develop quality questions. After writing questions from your notes have another person read the story and try the questions out on them. This will provide an opportunity to test the Testing the Question criteria.



Spontaneous interpretive questions are an important part of all discussions. Experience with preparing questions and using interpretive questioning techniques support spontaneous questioning.

Appendix 2

Collegial Coaching: Facilitators Coaching Facilitators

The Facilitators Coaching Facilitators model focuses on facilitators regularly observing each other to learn, understand, and improve their pedagogy (learning & presentation methods). The observed presentations are generally in the 15-40 minute range to provide a focus on particular segment of the Growing Thinking Schools training.

The Process

Observing

1

Observing (learning & planning)

Facilitators observe a live training module in small groups writing observational notes and questions (visual maps and written notes), making sketches, and taking photographs. The session is also video taped.

Reflecting (sharing & growing)

After observing a training module, the observing group reflects on their observations with observations and reflective questions.

Observing (learning & planning)

The observing facilitators watch a video of a Growing Thinking Schools training module taking notes (written and visual maps).

Reflecting (sharing & growing)

After observing the Growing Thinking Schools training module, the observing group reflects on their observations with observations and reflective questions.

Doing

2

Briefing (deciding & planning)

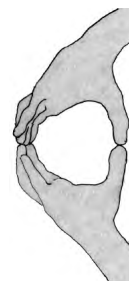
The presenting facilitator leads the other facilitators through a storyboard (flow map) of the presentation to be observed. The facilitator doing the presentation might have requests for the observation, and the observers should have a specific focus to observe.

Facilitating (doing & observing)

The observing facilitators take notes, make sketches, and/or take photographs of the presentation. Additionally the presentation is video taped.

Debriefing (reflecting)

All the participating facilitators including the facilitator doing the presentation meet to discuss the presentation. The protocol is:
—something positive observed
—reflective questions
—what are you taking away from the observation



Appendix 3

Thinking Schools Accreditation Process

By engaging the entire school community in a process of self-study, becoming accredited as a Thinking School provides a meaningful opportunity for continuous learning and creates an enduring culture of reflective practice. Schools that have chosen to use the accreditation process as an opportunity to demonstrate and affirm their commitment to the principles of becoming a Thinking School.

What?

The Thinking Schools Accreditation Process (TSAP) offers an opportunity for schools to engage in a systematic, collaborative, enquiry process. The framework for accreditation is based on 5 Key Areas for Reflection and 15 Criteria representing the vision of directly facilitating thinking as a foundation for early childhood through adult education and for nurturing all students as global citizens. The five key areas are: ***Student Centered; Facilitative Leadership; Integrated Professional Learning; Interactive Assessment; and School-Wide Ethos.*** A member of the accreditation team certified by Thinking Foundation serves as a guide for each school. As a school community begins the process, artifacts are collected toward the creation of a school wide TSAP Portfolio. Ultimately, the school submits a Thinking Schools Portfolio for review, publication and web based distribution to others in the Thinking Schools Network around the world. Depending on the planning and development of each school, the process may take between 18 months to several years to complete. Advanced accreditation is also offered in order to sustain the evolving practices and vision of each school.

Why?

The primary purpose for schools to engage in seeking accreditation is to help create an environment of self-study and assessment within each school community. This focus on “reflective practice” is fostered through guidance and feedback from informed “critical friends” on our TSAP team. The process of collecting and reflecting on artifacts like classroom work, videos, and photos practical use of a range of models for thinking becomes a catalyst for continuous improvement. Schools use the information they generate to continue to inform, guide, and inspire their ongoing development.

A second purpose is to network with other schools that have already become accredited and learn from the processes, feedback, outcomes, and insights from educators and students around the world.

A third purpose is based on authentic recognition of learning across a whole school: accreditation as a Thinking School offers each school recognition for making well documented shifts toward student centered learning for global citizenship.

Formal certification and publication of the TSAP Portfolio also offers students, teachers, parents and community members an opportunity for celebrating their efforts and outcomes... and for projecting the school culture forward toward deeper, sustained implementation.

How?

The school community meets to decide whether or not to engage in the Thinking Schools Accreditation Process. This often happens after the school has already begun implementation of their own plan for implementing a Thinking Schools approach. If the decision is to move forward, the school contacts Thinking Foundation and is linked to an accrediting partner who will guide them through the process. There are six basic steps of the process: Initiation; Preparation; Self-Study; Accrediting Partner Review; Action Plan; and Dissemination.

A representative from the accrediting partner meets (in-person or online) with the school’s Drive Team to explain the process, clarify the 5 Key Areas for Reflection and the 15 Criteria, and assist the school in establishing a preliminary timeline for the accreditation process. Requirements for submitting a web-based portfolio of the school’s self-study are explained and any technical support the school needs is discussed.

Further Information?

Further information on the Thinking Schools Accreditation Process (TSAP) is on the Thinking Foundation website at www.thinkingfoundation.org



The Thinking Schools Five Areas for Reflection and Fifteen Criteria

Student Centered <i>Student Centered Thinking develops life-long, independent and cooperative learning skills including reflective, critical, and creative thinking and the capacity to solve problems and transform information into meaningful knowledge and action.</i>	Facilitative Leadership <i>Facilitative Leadership engages all members of the school community in interactions that promote group and individual learning, informed and thoughtful decisions, and a planned, sustained effort toward a common purpose.</i>	Integrated Professional Learning <i>Learning provides access to planned, connected and diverse opportunities for continuous learning and growth for individuals and groups within the adult school community in the thinking pathways the school has chosen.</i>	Interactive Assessment <i>Interactive Assessment is a continuous process of reflection on growth and development to inform both learner and instructional decision-making that engages teachers and learners in a variety of formative and summative approaches.</i>	School-Wide Ethos <i>School-Wide Ethos reflects the quality of the thought-filled interactions between and among people within the school and the larger educational community and the ways in which all members actively demonstrate respect for each other and the capacity to invite and consider multiple perspectives.</i>
Guiding Criteria:				
Guiding Criteria: 1. Students Centered Learners Students' development as thoughtful, caring, responsible learners is reflected in learning outcomes, attitudes, behavior of pupils, across diverse populations.	4. School Leadership Team A vibrant and highly effective "Drive Team" reflecting support and involvement from key stakeholders in the school community has been developed and is actively engaged.	Guiding Criteria 7. Professional Development Ongoing, systematic professional learning opportunities are provided to develop and support expertise of the thinking models and to sustain their integrated use over time.	Guiding Criteria: 10. Assessment to Inform Differentiated forms of both formative and summative assessment are used to inform instructional and learner decision-making.	Guiding Criteria: 13. Whole School Culture The organizational structure and visual presentation of the school reflects a positive, caring and creative atmosphere representing all stakeholders.
2. Student Fluency A high percentage of students are fluent with skills, tools, and models and use them in an integrated manner.	5. Implementation Plan A clearly articulated long-term plan for the introduction of the thinking models and for their growth beyond the accreditation process has been designed and is being actively followed.	8. Differentiation for Educators Teacher and leader skills and practices grow across a variety of teaching and leading styles, content areas, and cultural backgrounds.	11. Reflective Thinking Reflective assessment of thinking is an explicit, regular dimension of everyday classroom practice.	14. Collaborative Community Regular opportunities, across roles and responsibilities, are designed for school members to discuss and reflect on the teaching and learning experiences related to the development of a thinking school.
3. Communicating Learning Media/technologies are used by students with thinking models to access, process, and communicate ideas.	6. Learning Centered Leadership The leader incorporates the thinking models in coaching and guiding reflective practice, supporting active, purposeful engagement and collaboration, and for promoting thought-filled decision-making.	9. Collaborative Inquiry Individual and group professional learning opportunities utilize an inquiry approach, incorporate peer learning, and promote reflective decision-making.	12. Interactive Assessment Students, as well as teachers, are actively involved in the assessment processes and opportunities exist for both of them to use these processes to develop as autonomous learners and teachers.	15. Global Networking The school actively develops opportunities for collaboration within and beyond the school community, including other schools in the TSI network.

Appendix 4

Blended Professional Development: Video, DVD, Internet, Skype Training

In-person training is important in building collaborations. Effective professional development incorporates additional models including the use of video, DVD, Internet and video conferencing (e.g. Skype). The Thinking Schools Ethiopia model includes using videographers to take video of demonstration lessons modeling the use of the various Thinking Schools approaches. The video clips will be edited and used as a library of demonstration lessons, lessons on pedagogy, and other examples with teachers and students using Thinking Schools strategies and methods. Each woreda will develop a local video library and all the woredas will contribute to a greater library for the Tigray Region to use with local schools, and network regionally, country wide (e.g. with the Ministry of Education) and globally.

Initially under the guidance of Thinking Schools International Global Trainers, and Thinking Schools Ethiopia trainers, models for video and development of DVD's for use by schools will be developed. These models will be used by Thinking Schools Ethiopia trainers, and staff from the Tigray Development Association and the Tigray Education Bureau. The media will be accompanied by a brief manual using guiding questions and visual mapping to support teacher training.

The model:

There will be two video crews of 2 people. One person will be doing video, the other will be producing and support with any needs for sound. There will be a team of two editors to edit the video taken in the field. They will have a format to follow to assure quality video production - both with regards to content and technical quality. The next step is training the Thinking Schools Ethiopia trainers and the Tigray education experts how to use the video in the field with educators. This includes at professional development sessions and for educators to use when the Thinking Schools support is not at the school.

People:

- two teams of 2 videographers on each team (4 total) working in the schools. Each video crew will go to at least 20 schools per month. The goal is over two years of implementation all schools will have representation in the video library;
- a team of video editors editing video from the schools for use by trainers and educators;
- one online programmer to post the video clips online for use with international collaborations;
- one producer of the team;
- two directors to facilitate a weekly 15-30 minute television broadcast modeling use of the Thinking Schools methods including video clips from the school;
- one person coordinating and producing video conferencing (skype) sessions with other schools globally
- there will be a total of 11 people working full time during the two year initial phase of the Thinking Schools project creating the video, the video library, DVDs, a TV production and supporting video conferencing.

Video Conferencing

The use of video conferencing will assist in the Trainers collaborating with TSI Global Trainers and with other schools globally in the Thinking Schools International world-wide network. The training would happen at specific locations within each woreda.

Documenting

The Thinking Schools Ethiopia implementation of whole school change with Tigray schools will be documented through video and print for the purpose of learning, sharing and growing the whole school change. This will be accomplished with the use of video, posters reflecting video and an online website/blog with with progress of the initiative.

- video of short documentary films will be made during the initiative to share what Thinking Schools Ethiopia and whole school change are and how it happens. The video will be used at school sites, in presentations to key stakeholders, as part of the professional development, and as a reflective tool for all stakeholders.
- documentary films are used for leadership and teacher training
- posters that share the experiences of the whole school change process. These posters will be developed from interviews and features done on video. They will be used at schools sites to share and learn about school successes
- website and blog using interviews and video to document the TSE-Tigray initiative
- Student Voice and Professional Development for the TSE-Tigray Project where students use the same documenting tools. Their role is to be mentors to other students and model ambassadors for the school.

Examples:

- poster used with Bikolos Academy in Addis Ababa. This poster was developed from interviews captured on video with teachers, students and leadership.
- video documentary and accompanying handbook that supports the process to initiate and guide schools through a process of transformational change. Please see an online example at www.thinkingfoundation.org/mom/
- website that has been documenting the TSE development in Ethiopia for the past several years: www.thinkingschoolsethiopia.com

Student Engagement: Student Voice and Professional Development

A group of students at the high school and primary schools will be part of the Student Engagement (SE) professional development for students. Their role is to be mentors to other students and model ambassadors for the school. This will begin with the students mapping (with Thinking Maps) their journey. This will sharpen their use and understanding of the maps while developing a plan for mentoring students and documenting learning outcomes of the maps.

Some Key Constructs

- student engagement begins initially with High Schools
- high schools mentor primary schools as a model to then continue next year with mentoring both with the primary and new high schools
- developing case studies of successful classrooms and schools
- students cross age peer to peer teaching
- students use video to document their findings
- parent nights sharing their experiences and findings



Resources

Thinking Schools Ethiopia

www.thinkingschoolsethiopia.com

This website includes documentation, video, graphics, still photos and more about Thinking Schools Ethiopia and Thinking Schools International.

Tigray Development Association • www.tdaint.org

Tigray Development Association (TDA) was established on November 25, 1991 registered as rightful association in accordance with article 404 of the Ethiopian Civil Code of 1959 and other relevant proclamations. TDA has been registered and licensed by the FDRE, Ministry of Justice Charities and Societies Agency as an Ethiopian Residents Charity in accordance with the Charities and Societies Proclamation No 621/2009 article 111(2) with the registration No 0462. A new by law pursuant to the criteria of the agency has been enacted. TDA is a tax exempted, nonprofit making and community based development organization with currently more than one million members all over the world, mainly in Tigray Region.

Thinking Foundation • www.thinkingfoundation.org

The mission of the non-profit Thinking Foundation is to support high quality research on cognitive skills development, creativity, and critical reflection—at pre-school, K-12 and college levels in order to transform learning, literacy, teaching and leadership around the world for those with the greatest need. The Thinking Foundation website includes the Thinking Schools accreditation process, extensive research and cases studies on the use of visual tools and other thinking methods that are part of Thinking Schools Ethiopia.

Thinking Schools International • www.thinkingschoolsinternational.com

This website includes information on the Thinking Schools process, information and links to many global Thinking Schools projects, and case studies.

Eminence Social Entrepreneurs • www.eminence-se.com

This website provides an overview of Eminence Social Entrepreneurs who is the collaborative organization in Ethiopia for Thinking Schools Ethiopia.

Robert Seth Price - Senior Global Trainer • www.eggplant.org

This website provides information on the TSI Global Trainer who has been collaborating with TSE on the Thinking Schools Ethiopia project.

David Hyerle - Co-Director of Thinking Schools Ethiopia

www.thinkingschoolsinternational.org





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Date: 27 January 2012

To Whom It May Concern



UNESCO International Institute for Capacity Building in Africa (IICBA) has written this Letter of Support to Eminence Social Entrepreneurs, a local non-governmental organisation, for the work it is doing to promote the concept and practice of Thinking Schools Ethiopia.

Thinking Schools Ethiopia aims to promote modern teaching and learning methods in Ethiopian schools through the Thinking Maps Methodology and Whole School System. IICBA, as an Institute engaged in the promotion of modern pedagogy and support to teacher education institutions in Africa, has been participating in the workshops that were organised to familiarise school teachers in Addis Ababa with the methodology of using Thinking Maps and confirms that the new approach to teaching and learning will be very beneficial to students in Ethiopian schools.

As part of Eminence's commitment to "rejuvenating and transforming the delivery of services in Ethiopia", IICBA believes that the Thinking Schools Ethiopia exercise will introduce a new dimension in the way teachers think about teaching and students about learning.

IICBA wishes that the project succeeds in its bid to improve teaching and learning in Ethiopia.

Sincerely,



Arnaldo Nhavoto
Director
UNESCO IICBA
Addis Ababa

Thinking Maps®: Developing Confident & Competent Thinkers & Learners - Bikolos Nur Academy



Hannan



Abdurahemen



Sabontu

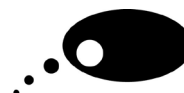


Hussien



Thinking Maps® for Organizing Thinking

Bikolos Nur Academy, Addis Abba, Ethiopia Students and Teachers share their reflections on the use of Thinking Maps® as part of Thinking Schools Ethiopia



Students

Hannan: I really think that Thinking maps make a big difference in my life because before I really didn't read my books much because it takes too much time to understand, but now I am interested to open my exercise books make Thinking Maps to actually study and know what I am reading. We can be independent and learn by ourselves, because Thinking Maps are our teachers. They make everything easy so that we can read and remember — it makes you visualize things. Thinking Maps capture our thinking in our mind.

Hannan Abdulfetah, Grade 9 Student

Abdurahemen: Thinking Maps have helped me a lot in studying. Next year I am taking national exam. I am preparing my summaries using Thinking Maps because it is taking a shorter time with Thinking Maps. It is more effective because by looking at the circles and the other maps, I can remember what is inside and that makes it easier for me to study.

Abdurahemen Kassim, Grade 9 Student

Hussien: We are using the maps very effectively and the class is now more student centered with everybody participating. The eight Thinking Maps are so helpful because we can do our work easily — for example our book is a huge book so it is tiresome and consumes much time. But you can use a piece of paper and draw maps and easily analyze the things about the subject in few minutes. When we do Thinking Maps in group work everybody is participating on it, so it is going to be fun and interesting.

Hussien Abdulnessir, Grade 9 Student

Sabontu: Thinking Maps are very easy to use and to remember. Before when we work in groups there was not much argument but now we can easily visualize things and remember what you see in pictures in the mind. These maps are like pictures and have different designs and very easy to remember.

Sabontu Ali, Grade 9 Student

Teachers

Adefres: I really want to thank the thinkers who give us Thinking Maps and make us think to ourselves and for our students. Thinking maps are very helpful. I have spent many years teaching chemistry and I have been trying many methods to visualize chemistry to students. The thinking maps made everything clear in these 2-3 weeks after the training.

Adefres Zerihun, Vice Director and Chemistry teacher

Huda: Thinking Maps makes our life easier and help us impart lessons which were difficult to comprehend. The students have accepted Thinking Maps in a very special way and related to the maps. I hope the Thinking Maps will go on so that we can give them what they deserve and we can get from you what we deserve.

Huda Seid, Vice Director and English teacher

Mohammed: Starting with the Thinking Schools training, I understood that the training and the Thinking Maps is participatory. We were at the training on a Friday and started implementing Thinking Maps on Monday. The training has helped me a lot because before I had hard time delivering my subject to my students. But after learning the Thinking Maps and introducing the eight Thinking Maps to my students, my subject is understood more easily. We are always told about student centered teaching but it is with Thinking Maps I could involve all types of learners in my class. This is also the policy of our country and if we regularly implement them and get reference materials, we can even do better. Both the staff and the students have loved it and we thank you.

Mohammed Awol, Social sciences teacher

Usman: I have used all the Thinking Maps except the Bridge Map in my grade 3 lessons. I am very excited. My students love the Thinking Maps and are internalizing the maps. The Thinking Maps are helping us to identify the level of the students. For example, some students remain in the circle map and others apply the other maps achieving higher order thinking in Blooms Taxonomy. So generally I am very happy as the Thinking Maps assists us in effective teaching methodology and students. Recent results have shown slight increment of growth from last quarter over a period of three weeks.

Usman Mohammed, Grade 3 Science Teacher

Zewdu: Thinking Schools Ethiopia is very interesting starting from the training. The Thinking Maps makes our minds visualize information. In this short time students are referring to and using the Thinking Maps more than the previous methods. All students are more active than the previously because they can easily understand the topics and remember what they are learning.

Zewdu Hailu, Vice Director and Physics teacher



Adefres



Huda



Mohammed



Usman



Zewdu



Thinking Schools International
www.thinkingschoolsinternational.com

Thinking Schools Ethiopia
www.thinkingschoolsethiopia.com



"I would like to see this continue in some form. This was a complete success. It would benefit to have this training on an ongoing basis for public school teachers that would assist the whole education system in the country. This was a workshop about changing minds and acquiring a new set of beliefs about what education is all about."

*Awol Endris, Ph.D. ; Program Officer, Education and Training
UNESCO - International Institute for Capacity Building, Addis Ababa, Ethiopia*

"This thinking process is a day to day activity with each individual [in all classrooms]. When applied in a government school, the people that come from different backgrounds will learn more. This training is very important to be practiced at all levels in government schools across the grades and all subjects. I suggest it is better to select a model school in different regions. In time these techniques will duplicate to all schools in the country."

*Tilahun Teshome - Ministry of Education - Special Needs Programme in Ethiopia Expert
Daniel Abebe - Ministry of Education - Curriculum Designer*

"It goes without saying that in-service training plays the role of enhancing teachers' competence of effectively imparting lessons. The training, in my view, did constitute an enlightening and capacitating workshop as far as teachers' roles in facilitating and suiting students' learning is concerned. It bore the idea that entitling students [children's] brains to learn of their physical and social environment by its own has in the long run the advantage of shaping independent learning at one's own pace, intellectual capacity and other particular circumstances. It generally is a shift towards making education students' responsibility."

Dagim Melese - Thinking Schools Ethiopia

Thinking Maps Implementation • Addis Ababa Ethiopia • 2013

Whole School Transformational Design Change • Bikolos Academy (Pre-K, K-12 whole school implementation)

Student

Abdurahemen: Thinking Maps have helped me a lot in studying. Next year I am taking national exam. I am preparing my summaries using Thinking Maps because it is taking a shorter time with Thinking Maps. It is more effective because by looking at the circles and the other maps, I can remember what is inside and that makes it easier for me to study.

Abdurahemen Kassim, Grade 9 Student

Teacher

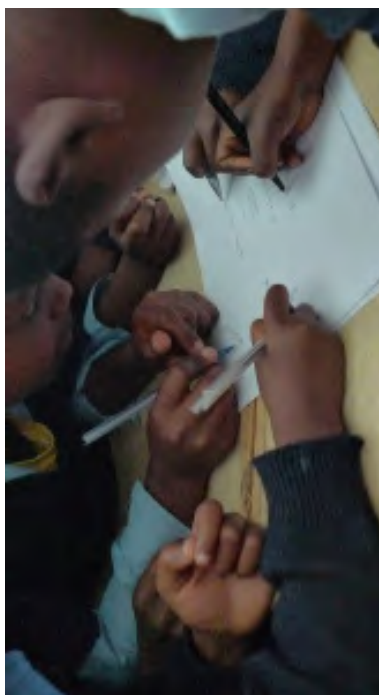
Adefres: I really want to thank the thinkers who give us Thinking Maps and make us think to ourselves and for our students. Thinking Maps are very helpful. I have spent many years teaching chemistry and I have been trying many methods to visualize chemistry to students. The thinking maps made everything clear in these 2-3 weeks after the training.

Adefres Zerihun, Vice Director and Chemistry teacher

School Leader

Fatuma: The first time I took the training was through our school network with around 15 other schools. By then, I was convinced and believed this is the way to quality education. After the training, immediately, I introduced Thinking schools to my school. Now, it is a month since its introduction and within this time I have seen a big change. The students are starting to think clearly and improved creativity as well as creating their own way of thinking and simplifying things.

Fatuma Ahmed, Founder and School Director



From a training of Government School Principals (11 schools in AAEB + 22 schools from other regions) – August 2013

Thinking Schools Ethiopia Facilitator: As you are leaders of different schools, I would like to know how this training was useful for your own work. *Atsede Tseheyer, Thinking Schools Ethiopia Facilitator*

The Training: “What I understand from the two day training was, training can be fun with Thinking maps, experience sharing and reflections.” *Wosen Sileshi, Principal*

Collaborative Learning & Whole School Change: “The training was helpful for school administrators too, it helps us to work with our staff collaboratively and come up with new ideas.” *Abenet Girma, Principal*

Student Centered for Students — Participant Centered for Teachers and School Leaders: “Starting from the trainers, I have seen how we should treat students and how this will affect their performance and their interest in coming to school.” *Zenebe Nigussie, Principal*

Student Prior Knowledge, Thinking Methodologies, Smiles: “Now I understand that students come to school with prior knowledge, how sentence transformation works and various tools to make class room interactive. The other important thing I notice was how powerful it is to welcome students every day and see them off at the end with smile.” *Tegegn Shimelash, Principal*

Quality Education for All Children: “The Thinking Maps will assist us in solving our fundamental problems by bringing quality education to all children.”

Milkias Bonke, Principal

Sharing, Spelling, Fluency, Collegial Collaborations: “The main thing I got today is sharing experience from my colleagues and other schools. Secondly, I found different techniques how to teach spelling, fluency, thinking.” *Getasetegn Engida, Principal*

Vision: “I can see it in two ways, one: it helps us to see what is available in our schools and outside of our school. Secondly; because previously a lack of teaching methodologies, students performance may be lowered. With thinking methodologies we can give them these tools to support the school team and students.” *Abraha Hailemariam, Principal*

Online video of the above interviews may be watched on:

Thinking Schools Ethiopia website: <http://blog.thinkingschoolsethiopia.com/?p=1384>



Training with AAEB Expert Team

"This training is a pilot project (training with AAEB expert team), next we'll go to schools. We will train teachers and principals. Gradually the program will be at a national level. Let alone your job or other businesses, it helps even in our day to day life [Thinking Schools approach and methods]..."

Dilamo Otore Ferenje – Head of Addis Ababa Education Bureau (AAEB)

"An education with a great wide base that may be taken as a good practice that can be scaled up in any places..."

Addis Ababa Education Bureau expert

"The training is very good because it goes with the context of our country which has large class sizes..."

Addis Ababa Education Bureau expert

"Thinking School training's methodology is related with the teaching and learning process... which helps students to understand things easily..."

Fesehaye Nigusie – Addis Ababa Education Bureau expert

"I have gained knowledge that students are not only receivers but they can also be active and reflectors... what I am most amazed at is on how to make complicated things easy for students simply..."

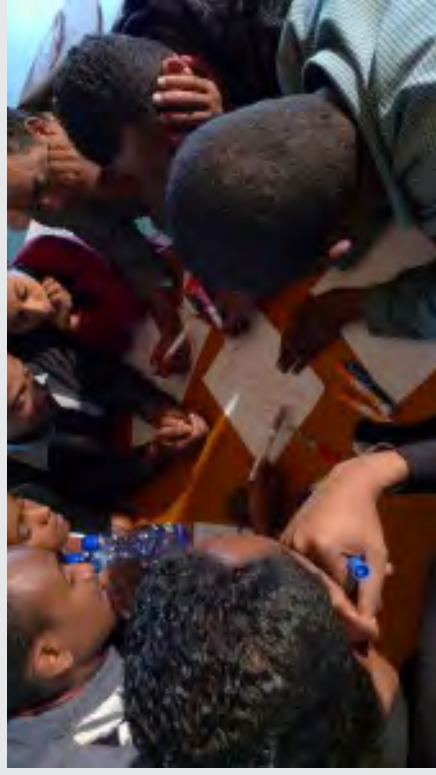
Thinking Schools Ethiopia – Eminence Social Entrepreneurs

"Growing Thinking Schools is concerned in transforming schools from traditional methodology to a methodology which involves the thinking process..."

Atsedede Tsehayou – Thinking Schools Ethiopia – Eminence Social Entrepreneurs

"We are being trained on methods to let the students exploit their potentials"

Dade Girma – Addis Ababa Education Bureau expert



PATHWAYS TO
Thinking
SCHOOLS

DAVID N. HYERLE | LARRY ALPER
EDITORS

FOREWORD BY YVETTE JACKSON





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5

Journey

Editors' Introduction

In his chapter above, which focused on the background, evolution, definition, and criteria of Thinking Schools, Bob Burden noted that there was one school that was an early exemplar for him for what is possible when educators come together over time to focus on thinking as central to the value system of their learning community. Here is the story of that school, detailing the long journey toward becoming a Thinking School.

The story told by Gill Hubble, one of the key leaders of St Cuthbert's College in New Zealand, begins all the way back in 1992 and takes us through to early 2003. What may be surprising about this decade-long transformational process that continues to this day is that this single-gender girls' secondary school was doing quite well in the national rankings in New Zealand. Yet, after survey and interviewing their "high scoring" post graduates, most of who were in college, they found that many of their students while once testing near the top were not at the top in college performance. Many students also reported that they felt in some areas unprepared for the independent thinking and rigorous challenges of courses. They scored in the 75% to 85% level in their courses, but relatively few could break into the top 10%. Why this discrepancy? The leadership and later the faculty slowly and surely moved forward as a whole to explore new ways of directly supporting their students to think more deeply and independently, autonomously.

As you will see, explore they did! Yet the outcomes of the first few years offer all who want to reframe their schools around thinking a few essential lessons learned about the process. While individual teachers experimented with new approaches and there were many professional development opportunities focused on teaching techniques—and teaching and learning improved—there was little evidence of a coherent, school-wide impact on students, or on their performance. Teachers were more aware of approaches, but students were not learning sets of strategies, or models, that they could transfer, autonomously, into their daily work.

The outcome? By the late 1990s, as the story is told below, St Cuthbert's came to focus on a few good models that they had tested in their classrooms: Thinking Maps and Habits of Mind. More in-depth professional development was conducted for all staff with a commitment that the focus would be on students' fluency with both models working together in an integrated way. Most important, the schools did not depend on merely implementing these models. They developed their own design for bringing the idea of thinking becoming central to the definition of the school, reflected in their understanding that this process was about having a transformation in the environment, the character, the ethos of the school. You will read about their "double-processing" technique, metacognitive lesson

planning, multiple intelligences/differentiated learning activities available to students through their intranet, and school-wide focus on inquiry techniques drawn from the Philosophy for Children approach. This demonstrates that it is not only about implementing effective models, or approaches, but rather the process of consciously creating a comprehensive weave of systematic, whole school practices over time.

You should also know that for all this hard work and long processes of change, St Cuthbert's School's ranking went to the top in the nation over time, thus demonstrating that a focus on thinking improves students' thinking abilities as described below, while also positively impacting outcomes on measures of achievement within the traditional evaluation criteria.

This chapter stands as a testament for schools that first look inside themselves for questions and their own answers, while simultaneously reaching out for support and networking with other schools and experts in the field to evolve a design for creating their own Thinking School with rigorous attention to student needs. The teaching, leading, and learning practices have significantly changed. There is good reason why Bob Burden references the experiences described in detail below as key to his thinking about the process of taking this path. This school certainly has also been an inspiration for educators around the world wanting to engage in growing a Thinking School from the inside out.

JOURNEY TOWARD BECOMING A THINKING SCHOOL

Gill Hubble, MA

I have always thought that all schools could become “thinking schools”—schools that consciously and systematically focus on the development of cognitive and critical thinking for all students—via various pathways. St Cuthbert's College in Auckland, New Zealand, the girls' school described in this chapter, piloted and evaluated a range of thinking strategies and approaches as a first stage, before finally realizing that doing a thorough job of introducing, training, and implementing Thinking Maps would actually provide a basis of understandings about cognitive strategies in general. When I was the associate principal and later researcher and consultant for the school, I became aware that this foundation allowed other strategies to be used and in fact strengthened various combined approaches. Over time, this allowed for autonomy for both teachers and students as they selected the best strategies to fit particular purposes. Students using Thinking Maps on their own is a start but is not the end point or long-term goal of becoming a Thinking School. This has been witnessed over the past 3 years as Thinking Maps have been integrated into dozens of schools in England (in coordination with the Cognitive Education Centre at the University of Exeter) that are refining their own evolving definitions toward schools in the 21st century focused on the wide-ranging processes of thinking.

St Cuthbert's has developed many learning approaches, but a solid understanding of the basic thought processes gained through Thinking Maps has been crucial. The other approaches that have been complementary are Costa and Kallick's (2000) Habits of Mind in the behavioral domain and a focus on

Bloom's (1956) taxonomy of cognitive objectives to explain to students the steps that can be taken to think in more complex ways. In addition, this school has a focus on philosophy. Originally this was developed through the Philosophy for Children program developed by Dr. Mathew Lipman, but now questioning, building arguments, logical and lateral thinking, making assumptions, generating concepts, and ethical thinking are all given significant curriculum time. Time is also deliberately given to the teaching of various skills using mobile phones and Internet blogs, which allows students to use Thinking Maps and other strategies outside the classroom. This has resulted in a huge expansion of the information-technology department, which services student responses and links both teachers and students together in a sophisticated, flexible thinking community, responsive to and respectful of others' ideas.

The pathway this school has taken has resulted in learning and *thinking* being central to the way everything is done. The school community sees itself as a Thinking School because all the opportunities provided by the school are in some way designed to extend students' thinking outcomes.

■ BEGINNING THE LONG PROCESS

In the later part of the 20th century, our school began an evolutionary process that finally envisioned a community of learners who could move beyond "tacit use" of thinking skills. Through research, practice, personal discoveries, and many rich conversations, we made a multiyear commitment to integrating the Thinking Maps language into our community. Over the recent years, we believe that our school has achieved "reflective use" of these tools—a sophisticated metacognitive use involving reflection and evaluation (Swartz & Perkins, 1989). We have come to believe that if our students functioned as reflective users of Thinking Maps, this would increase their thinking-skills repertoire and encourage autonomy of thinking and collaboration, certainly important if not essential outcomes for every school in a democratic society.

An assumption underlying the explicit teaching of thinking is that instruction in thinking skills can enhance the development of a student's thinking-skills repertoire (e.g., you can identify and teach the skills required for conscious decision making). In a narrow sense, it is always possible to teach thinking-skill strategies and tools and to test a student's cognitive comprehension of these skills or even his or her ability to apply these skills to a given problem. In a broader sense, the vision of many educators and researchers of the thinking-skills movement of the past few decades has been that the direct teaching of thinking is possible and is a necessary next step in the evolution of teaching and learning toward transfer of thinking skills across—and deeply into—content areas, for interdisciplinary problem solving and lifelong learning. Our story is of a school wanting it both ways: direct, formal teaching of thinking skills and explicit transfer into content areas.

St Cuthbert's College is a unique, single-sex, independent school spanning the K–12 grade levels, with a student population of 1,500 girls

aged 5 to 18. The college is expected to provide an outstanding education that not only encompasses academic, sporting, and cultural excellence, but also adds the dimensions of character and values education. Thus, the long-term development of a systematic, fully integrated use of thinking skills, ultimately leading to our use of Thinking Maps, took continuous focus and persistent attention to the goal.

There is a high expectation of all involved that we must provide for individual needs and produce graduates who can gain entry to the universities and courses of their choice and approach tertiary studies, and life, with the attitudes and skills that encourage success and personal fulfillment. Parents expect of the school that it retain its traditions and at the same time be innovative. Through the process of our evolution, we have moved from being a high-quality school with strong academic outcomes to being a true learning organization unified by a focus on developing high-quality thinking. Along the way, our academic results have moved us to the top rungs of the educational ladder in New Zealand, but this seems a sidebar to our evolving capacities to seek deeper understandings of how our minds work and to treasure the intrinsic rewards gained from becoming a school as a home for the mind.

Phase I: Discovering Too Many Possibilities

In 1992, staff and management began this process by reviewing the school philosophy guided by the following questions: What kind of learners do we want to produce in this college? What behaviors, attitudes, skills, and knowledge would they have? We agreed that we wanted our students to become adults who were lifelong, independent learners, who approached life's situations and problems positively and persevered to find resolutions and answers. It had been the norm in schools such as ours for teachers to be responsible for writing superb lessons. They were expected to supply students with books of resource notes and to test, train, and, in general, provide opportunities for students to learn. The focus was on disseminating information and expecting students to study and memorize all this valuable knowledge so they could have success in national examinations.

While our school did well in the national rankings of senior secondary examination results, there was a nagging feeling among some staff that our teaching methods were producing graduates who were dependent learners: students who had excellent recall skills, who were prepared to read and study hard, but whose work was careful, methodical, and pedestrian rather than original, inventive, and risk-taking. This idea was supported by the fact that many good students gained fine marks of around 75% to 85%, but relatively few broke into the 90th percentile at the university scholarship level. We decided that we had a responsibility to make a change for our students. We embarked on a project in 1992, which we hoped would lead our students toward being autonomous learners.

First, we made a list of all the qualities such a learner would have. What developed from this was the conviction that effective learners are good thinkers who have a range of internalized strategies they can use to do their work. Then

we debated these questions, to achieve the changes required to create the learning community we had described:

- How would this change our teaching practice?
- How would this change how students apply themselves to education?
- What skills or strategies would they need, if “better thinking” were our goal?
- From the range of theorists and practitioners who wrote on thinking, learning, and best educational practice, which should we use as our models, and which of the many strategies should we choose?

By 1992, a range of exciting strategies, methodologies, frameworks, and programs was becoming available for teachers who were interested in encouraging their students to think deeply and independently. A group of our staff read through the available literature and attended courses on best practices. The problem soon emerged: too many possibilities. Everyone who went to a course or read one of these books came to school converted and full of enthusiasm to try out the new ideas. We were all over the place. Across our K–12 school could be found pockets of teachers “doing” such processes as Edward de Bono’s CORT program, mind mapping, multiple intelligences, and learning styles.

This was all terribly exciting to those of us involved. We held many personal development–training sessions for the whole staff between 1993 and 1994, and some of us became specialists in one process or another. However, by 1994, it became obvious that we had made a great change to individual teaching practice, but had done nothing that made a school-wide impact for students. An individual student could have had some very good lessons from innovative teachers but not have recognized the strategies used or their application elsewhere. In addition, students’ thinking patterns or habits would have remained unchanged, and students would not have developed a set of strategies they could regularly use to do their work more meaningfully. We were also quite aware that there was very little conceptual transfer or internalization of the strategies.

Phase 2: Focus on Transfer and “Double Processing”

As a staff, we decided to focus on transfer: We would all focus on a selection of strategies, teach them across all disciplines at the same time, practice them, and explicitly identify them, so students could see the transfer links and how useful they could be in different situations. We selected some of the lessons from several programs and had developed the firm belief that students who processed work in a number of different ways gained a deeper understanding of the content. We called this “double processing”: If a lesson involved written notes in linear form, then homework could be to talk to parents about it. If a graphic organizer was used in class, then linear notes could be used for follow-up. At this stage, the graphic organizers we used were such things as the fish-bone, the Venn diagram, sequence boxes, and Mindmapping (or concept mapping). None of us had really associated these wide-ranging, disconnected

graphics with a cognitive function because they were used by staff to sort content information given in class or for homework. They were prescriptive: Students were told to fill them in.

In 1998, we again reviewed our thinking program. So much had been done, but somehow it still seemed more like a personal development program for staff to improve teaching strategies than for the explicit development of autonomous learning for students. Had we gone wrong? Better teaching had led to better marks for all, but it seemed to us that we were not making enough of a difference for *all* students. We referred again to Costa's (1991) vision of a school as a home for the mind as a reference point. Here was a vision of everybody in a school community working together to make thinking central to the way everything was done. What we needed was a common, school-wide language that we could all use, which could be built on from age 5 to age 18 in greater depth. We had a unique opportunity to introduce good thinking skills early and develop them over the years so they really made a difference, but which approaches were out there that could do this?

Phase 3: Uniting the School With a Common Language

In 1999, we decided to have a research year where interested staff would examine the various approaches, programs, and strategies that could form the basis of an effective thinking program. We focused on the primary elements of thinking from the critical, creative, and caring/affective domains. Thinking Maps appeared to be an excellent way to focus on eight basic cognitive processes and the use of the Frame of Reference for metacognitive development. The challenge for us was to get both staff and students to see these as effective thinking processes, united together as a language rather than as isolated graphic organizers. Our goal was to gradually teach and implement these over 3 to 5 years so students would have a range of strategies to employ.

Year 1: Introducing Thinking Maps in 1999

To introduce a common visual thinking language to the whole K–12 continuum of St Cuthbert's teaching and learning needs was an ambitious undertaking. We chose to introduce Thinking Maps through a three-year implementation cycle, by first teaching the use of Thinking Maps explicitly within noncurricular contexts. We chose this method of introduction since research (Perkins & Salomon, 1989) revealed that cognitive skills are not automatically acquired unless they are taught explicitly. This was a formal approach carried out by everybody—expected, planned, and agreed on by staff. Following the initial training, teachers were grouped into departments to find applications within subjects and units and were supported by follow-up sessions as they gained confidence. They began with a narrow view of what an isolated map could do—and what the maps could do together—and we encouraged them to focus on students gaining confidence and experience in use across the curriculum.

We also established a Department of Thinking and employed a thinking coordinator to manage the program and write the lessons using a six-step

methodology: (1) label the strategy (the cognitive skills and map), (2) explain the purpose, (3) practice (provide practice experience and feedback), (4) transfer (put into different content contexts), (5) evaluate, and (6) reflect. Teacher attitude was crucial, and where the teacher was confident and prepared, the lessons proved very successful in teaching the strategy.

While the primary school staff and students had a positive attitude toward the Thinking Maps approach, some secondary staff expressed reservations. Secondary staff had concerns about teaching skills in noncurricular contexts; they disliked the imposition of creating “artificial or forced” opportunities for conceptual transfer. In turn, some secondary students questioned the need to learn about the maps separately because “the teacher shows us how to do them in class anyway.” These older students said, “We already know how to think, and we don’t need you to tell us.” Generally, this is a situation easily overcome by confident, persuasive teachers who believe that the processes they are teaching can make a difference, but it is very difficult when the teachers themselves are unsure as they integrate the tools into their repertoire.

Despite these difficulties, we achieved our goal of having every child in the school introduced to the maps in an explicit way. Students are able to use all the maps as required in a range of situations and when use of the maps is genuinely integrated and flexible. Most staff members model metacognitive processes by saying, “I need to analyze this information—which maps do you think would be useful here?” Consequently, we see much greater choice and flexibility of use, including the use of a range of maps to reach a decision or to extend an idea.

We believe that our earlier work of encouraging teachers to get students to doubly process notes also paid off: During some lessons, students were to take notes only in map form and then for homework write up the information in linear form, and vice versa. We saw excellent collaborative work develop, as some groups elected to take class notes in map form and work as teams to develop the ideas as fully as possible. It is much easier to see ideas being extended when they can be presented visually, and students enjoy adding to a collaborative map.

We also had considerable success in working meaningfully with departments to help them create units and lessons that used the maps in subjects. These “transfer” lessons were almost always valued highly by staff and students. The goal was to demonstrate how a thinking tool could be used right across the curriculum—how it could be used for homework and study, in assessments, and to help make real-life evaluations of problems in context and make decisions.

Teachers began to see how useful a map was in eliciting prior knowledge. Students are now often asked to draw a map early in a lesson and then at the end of the lesson. By comparing the maps, students see and evaluate their own progress, thereby developing a sense of personal efficacy of themselves as learners. Metacognition and evaluation! Students also feel positive as they choose which maps to use when given a task. Secondary school staff members who initially were not enthusiastic about the maps because they said they had their own subject-specific processes became more positive when they saw that

the maps could clearly reveal where thinking had gone wrong. All students benefited from this opportunity to analyze the merits of each other's thinking processes.

Year 2: Evidence of Independent Use in 2000

In the second year, we were confident that students knew what a Thinking Map was (tacit use), but we were uncertain of the degree to which students used the Thinking Maps independently. We wanted to know the extent to which students had moved from tacit use of Thinking Maps, to aware use or even strategic use. Students could use the maps when asked, but we suspected that they did it without clear intent. The challenge for the year 2000 was to gather evidence of the existing students' independent use of the Thinking Maps.

To determine the extent to which a fluent and "reflective" student's use of maps occurred in problem-solving situations, we had students use their 20-minute thinking-skills time to collaboratively solve a long-term problem using Thinking Maps. For example, one teacher created a challenging activity on endangered animals playfully presented through a Gary Larson cartoon:

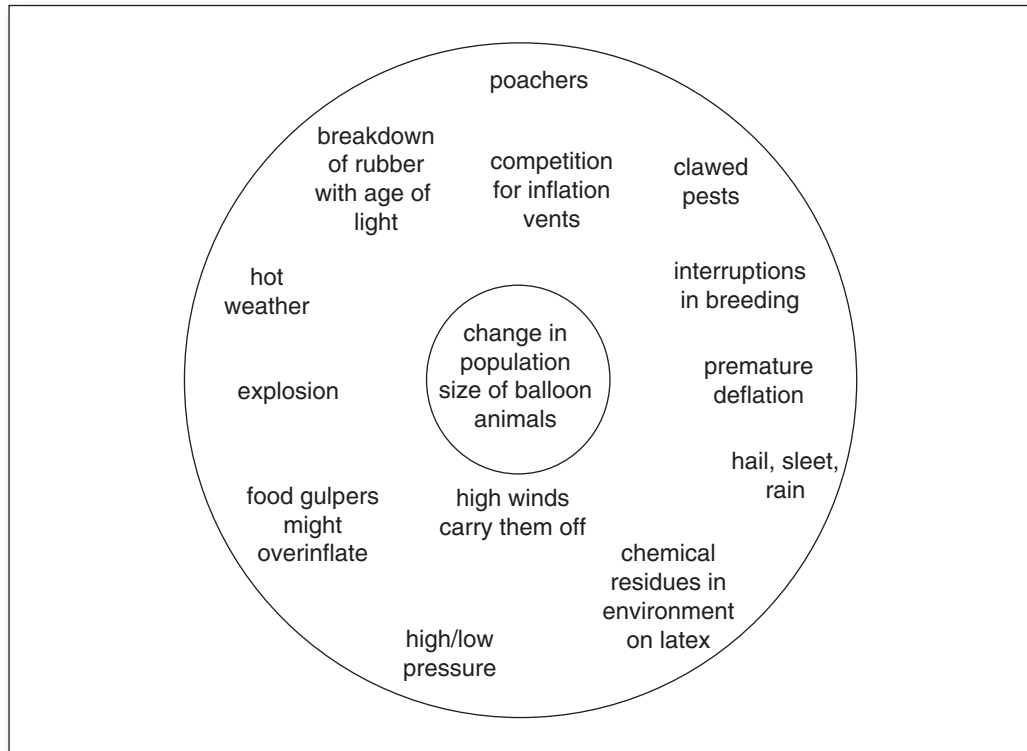
Imagine you are a member of a team of researchers charged with reversing the population decline of the endangered "balloon" animals that have a hard time surviving in a harsh landscape. Use Thinking Maps as tools for generating, organizing, and assessing factors that might affect the population size of the balloon animals (e.g., physical factors, catastrophic events, food supply, disease, competition, ecotourism). Develop an action plan, based around your Thinking Maps, to help reverse the population decline.

The students' efforts were assessed, and prizes for fluent and flexible use of Thinking Maps were awarded. One group of four students created the example, shown in Figures 5.1 through 5.5, of using multiple maps to analyze this problem.

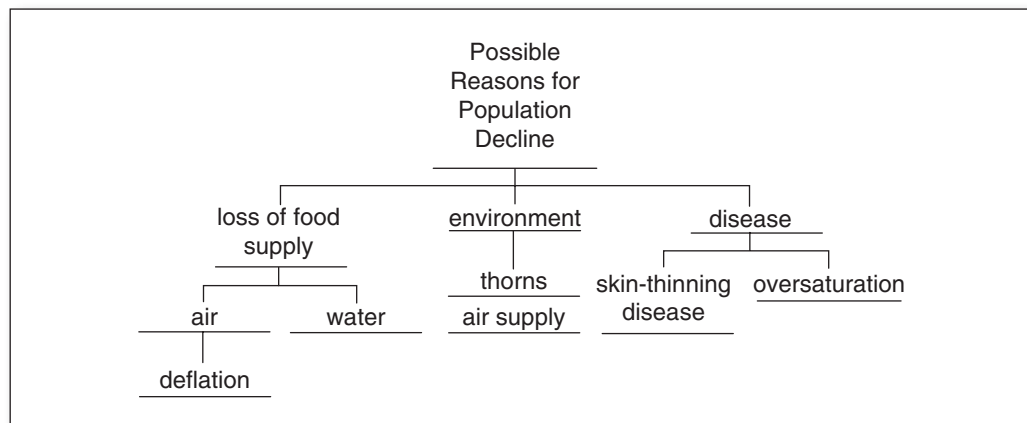
The purpose of the activity was to evaluate how students, working in cooperative groups, could apply multiple thinking processes via Thinking Maps to gain a solution to the scientific problem found in cartoons and nature. This sample of student work is representative of the quality of work received and reveals how these students could employ the tools for multistep problem solving and decision making. Although some students showed strategic and even reflective use of maps, the majority still struggled to show the fluency we expected in their map use.

Year 3: Reviewing and Moving Forward in 2001

Our review of student applications revealed that there was still a need for more explicit teaching of these tools. The development of autonomous transfer of thinking skills does not happen over just a year or two. It happens during the evolution of a student's educational career and lifetime. Our evaluation of

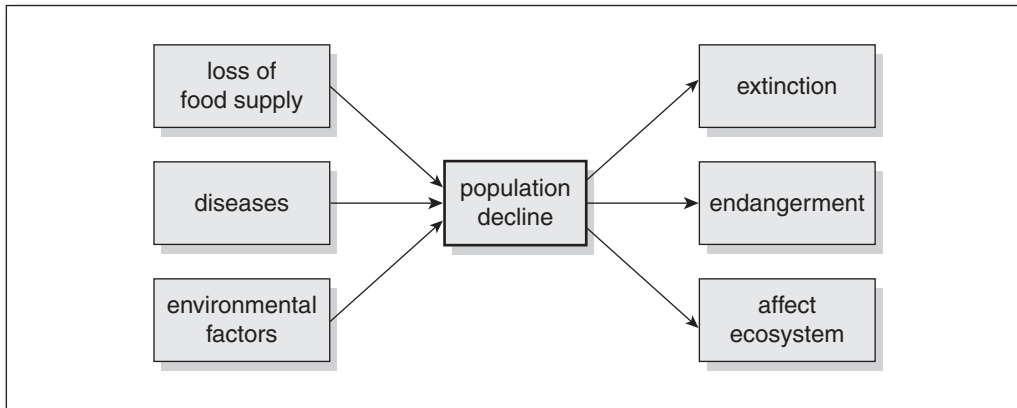
Figure 5.1 Factors Affecting Size of Population of Balloon Animals

Source: Hyerle & Alper (2011).

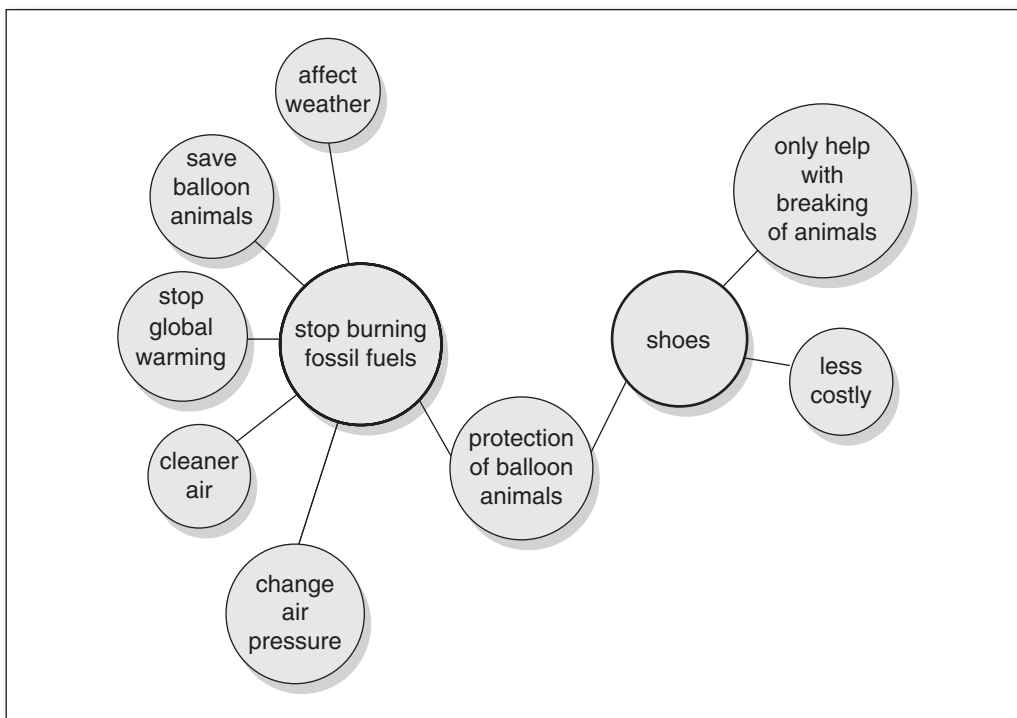
Figure 5.2 Categorizing Factors Affecting Size of Population of Balloon Animals

Source: Hyerle & Alper (2011).

student map use in the year 2000 indicated that many students and some staff were not as confident or competent in the use of Thinking Maps as we believed possible and necessary to reach the goal of being authentic, independent thinkers. We needed to revisit individual maps for fluency.

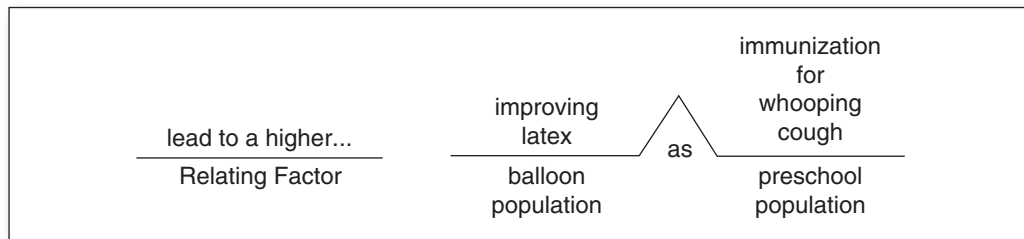
Figure 5.3 Causes and Effects of Population Decline of Balloon Animals

Source: Hyerle & Alper (2011).

Figure 5.4 Comparing Possible Solutions to Population Decline

Source: Hyerle & Alper (2011).

Though there was a risk of repetition for both teachers and students—the risk that many schools do not take for long-term change—we created a more authentic, thematic learning experience for senior students based on their reflections on the “Big Day Out,” a 12-hour music festival that many students and their friends had attended. We also carried out in-school research during

Figure 5.5 Making an Analogous Relationship With a Possible Solution

Source: Hyerle & Alper (2011).

the year using a questionnaire to ask students about the maps they had used, about the subject areas in which they used different maps, if they had used maps to organize their thoughts in situations outside school, and whether they believed their thinking had been developed through learning about Thinking Maps.

In the junior school, students were positive about Thinking Maps, had experienced their use in many different settings, and almost uniformly enjoyed using them to enhance their thinking both at school and at home. In the senior school, the results were predictable: Students who had experienced staff who valued the maps and provided opportunities for transfer into several different curriculum areas were positive about the usefulness of the maps and optimistic about map-related improvements in the way they solved problems or sorted issues. In contrast, students who had been provided with few opportunities to use the maps in curriculum areas or who had had teachers who avowed “grudging compliance” saw the maps, and the thinking-skills lessons, as “boring and a waste of my time.” Without opportunities for transfer, senior students marginalized the maps and considered them pointless.

Once again, it was evident that teachers make the difference to the implementation and effective use of a learning strategy. In 2001, in the senior school, we also moved toward more departmental autonomy. Secondary departments were asked questions such as the following: What kinds of thinking do you most value in your department? What are the most powerful experiences to encourage this thinking for students? What Thinking Map activities will you use to develop these skills? How might you show the effectiveness and value of your thinking-skills focus for students’ learning?

Departments were required to add their “thinking focus” to their departmental plan, and staff could choose to be apprised of this thinking focus. Individual departmental choice was interesting. The technology department chose to improve its students’ metacognitive thinking through developing links between sequencing (Flow Maps) and the design process. The art department wanted to use maps to strengthen problem finding and metaperception. In social sciences, pattern finding was valued, with a focus on Flow Maps for sequencing and Double-Bubble Maps for comparing and contrasting, and in the music department, there was exploration of the use of Brace Maps to better teach musical notation and intervals.

Years 4–5: A Common Language in 2003

Through our continued focus and retraining, by 2003 we had achieved a common visual-thinking language across the school, with staff and student competence with the maps much increased. The Department of Thinking expanded to two full-time teachers supported by a team of staff. Examples of student use of Thinking Maps continued to be displayed in every teaching space. They were regularly used in assessments and curriculum lessons. In the secondary school, we saw more experimentation in flexible map use than in the early years, with several maps being linked and used to process a task. In the junior school, the majority of students showed fluent map use by Year 6, and students were adept users of the Thinking Map software (Thinking Maps, Inc. 2006).

Thinking Maps continued to be explicitly introduced in the junior school. However, after three years' implementation, the map knowledge base in the senior school was considered to be such that teaching of individual maps was only required for new students. Flexible catch-up training for new students and new staff was provided each year, and ongoing support from the thinking coordinators was provided on an individual and departmental basis.

By 2003, we were able to recognize some significant advances in the way the maps were being used, especially since St Cuthbert's College had expanded its professional development time to 1.5 hours a week. There was planned training for teachers in how to link the maps to other thinking or learning strategies. This encouraged students to use a wider range of strategies together to engage with the content knowledge. When several approaches are used together—such as linking Costa's (1991) 16 Habits of Mind with Thinking Maps—the emphasis on isolated tools lessens and changes to an emphasis on whole thinking and learning processes. It also extends the quality of the thinking involved. Here is a sampling of some of the spin-off benefits of our evolution. Teachers have been experimenting with the following:

- Developing a metacognitive lesson plan, where teachers identify a specific learning goal and the questions they can ask students that will allow them to identify for themselves appropriate Thinking Maps to use.
- Encouraging greater infusion by creating intranet-based learning activities. Students can call up a page of lesson activities available for a task, click on a hyperlink, and be presented with a range of links to higher-order thinking, Thinking Maps, and multiple intelligence-differentiation activities. They can then download these directly into their responses.
- Encouraging flexible use by having a school-wide focus on “applied thinking,” where a philosophical real-life problem is analyzed using the maps and inquiry techniques.

These examples reflect the inherent rigor and flexibility of Thinking Maps and the empowering nature of the change process that was allowed to mature naturally over time. The learning outcomes for our students based on fundamental thinking processes and learning approaches have been remarkable. Academic results in New Zealand's national league tables have risen consistently, with the college a national academic leader, placing 1st or 2nd in New

Zealand in every senior external examination category for the past 5 years, up from 12th at the start of our evolutionary process. We have also seen improved results on international tests and PATs (reading, listening, and comprehension tests), the high level of acceptance and approval from students and parents, and the continued use of double processing using the maps and linear writing from our students who now attend universities.

Yet the most powerful outcome has been the move to collaborative and interactive classrooms where students—and teachers—are confident to discuss their learning and to learn from each other. We now know that students are much more willing to share their work with the class when it is developed visually, collaboratively, and through a flexible, common language for thinking that is the foundation for the evolution of our community. And, as teachers and school leaders, we are able to work deeply in our own content areas, with focused collaboration in teams. After 10 years, we are still living the never-ending ebb and flow of change and thriving as an evolving school as a home for the mind.

QUESTIONS FOR ENQUIRY

Art Costa urges schools to become a “home for the mind for all who dwell there.” In what ways did St Cuthbert’s School respond to this urgent call and engage the minds of all members of the school community? How did their approach into becoming a Thinking School establish the foundation for how their instructional practices would be transformed?

Interestingly, the students in St Cuthbert’s College were already performing at a high level before the school embarked on its journey of becoming a Thinking School. What, then, were the sources of their motivation to do so and what were the barriers they needed to remove or look beyond to genuinely embrace this process and its potential?

If St Cuthbert’s stands as a model for what a Thinking School can be, how might you describe its distinguishing attributes and qualities? What evidence was presented in this chapter that would support your descriptors? If you were to compare your own school with St Cuthbert’s, what might be the most significant similarities and differences? What conclusions can be drawn from this about your own school and the opportunities/areas for future growth and development?

■ REFERENCES AND FURTHER READINGS

- Bloom, B. S. (Ed.). (1956). *Taxonomy of educational objectives: Handbook: Cognitive domain*. New York, NY: Longman.
- Costa, A. L. (1991). *The school as a home for the mind*. Palatine, IL: IRI/Skylight.
- Costa, A., & Kallick, B. (2000). *Activating and engaging the habits of mind*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Hyerle, D., & Alper, L. (Eds.). (2011). *Student successes with thinking maps* (2nd ed.). Thousand Oaks, CA: Corwin.
- Perkins, D. N., & Salomon, G. (1989). Teaching for transfer. *Educational Leadership*, 46(1), 22–32.
- Swartz, R. J., & Perkins, D. N. (1989). *Teaching thinking: Issues and approaches*. Pacific Grove, CA: Midwest.
- Thinking Maps, Inc. (2006). Thinking Maps: Technology for Learning. *Thinking maps software version 2.0 user’s guide*. Cary, NC: Author.

Report on the Evaluation of the Impact of the Thinking School Approach

A report carried out by Thinking Schools International and the University of Exeter evaluating the impact of the Thinking School Approach

Produced by Martin Bell, September 2012

Background: The 'Thinking School Approach' is defined by Emeritus Professor Bob Burden as *"an educational community in which all members share a common commitment to giving regular careful thought to everything that takes place. This will involve both students and staff learning how to think reflectively, critically and creatively, and to employing these skills and techniques in the co-construction of a meaningful curriculum and associated activities. Successful outcomes will be reflected in student's across a wide range of abilities demonstrating independent and co-operative learning skills, high levels of achievement and both enjoyment and satisfaction in learning...."* (Burden, 2006). Since 2005, fifty five schools in the UK have gained 'Thinking School' accreditation from the University of Exeter by adopting a **whole school approach** to the teaching of thinking, embedding thinking in the heart of the school and its curriculum. A further hundred plus schools in the UK have joined the Thinking Schools network, often facilitated and trained by consultants from Thinking Schools International. In most cases, the journey to accreditation has taken at least three years to achieve. In September 2012, the University of Exeter and Thinking Schools International jointly funded a survey to evaluate the impact of the 'Thinking School' approach, as adopted by these 'Thinking Schools'. This is a preliminary survey, identifying areas for further research and evaluation.

The survey focused on five key areas:

- Satisfaction with the Thinking School approach (whole school) by accredited schools
- Attainment
- Thinking Schools International Strategies adopted by Thinking Schools (i.e. Thinking Maps, Habits of Mind, Philosophy for Children)
- Evaluation Methods of the Thinking School approach
- Major benefit and issues of the Thinking School approach

Summary of Key Findings:

- 100% of primary and 87.5% of secondary accredited schools are satisfied with the whole school Thinking School approach: none are dissatisfied.
- 90% of all accredited schools reported an improvement in the quality of lessons: none have seen lesson quality adversely affected.
- 89% state that the Thinking School approach raises attainment: Only one school stated attainment wasn't raised, but neither did it drop.
- All five major Thinking School International programmes are reported to be highly effective.
- 82% of accredited schools would welcome more support with their evaluation methods.
- Benefits greatly outweigh issues

Report on the Evaluation of the Impact of the Thinking School Approach

Introduction

Initially there will be an outline of the following:

1. The purposes of the evaluation project
2. The leaders invited to participate
3. The focus of the report.

Then the main findings of the report will be summarised before expanding on each of the survey areas, supported by data and leader feedback.

1. Purposes of the evaluation project

The evaluation project was jointly funded by the University of Exeter and Thinking Schools International. The purposes of the project were to:

- Report on the impact of the Thinking School approach as defined by Professor Burden and outlined on the TSI website
- To consider the benefits and weaknesses of the approach and to recommend further exploration of ways forward to make improvements
- To consider the effectiveness of the various thinking and learning strategies
- To gather feedback and make recommendations regarding the evaluation and measurement of the impact of cognitive education
- To specifically look at the use and the impact of MALS (Myself as a Learner Scale) on Thinking Schools

2. The leaders invited to participate

The main focus of the project was an online survey. The schools invited to participate and their response is as follows:

- Schools accredited by the University of Exeter as a Thinking School or an Advanced Thinking School: 49 were sent the survey: 27 replies were received.
- Non-accredited schools who had received at least one full training session from Thinking Schools International: 105 were sent the survey: 35 replies were received.
- Additionally 5 of the thinking leaders at accredited schools were interviewed for further feedback. Quotations are from interviews and comments made on the survey.

3. The focus of the report

This preliminary report focuses on the information gathered from the schools accredited by the University of Exeter. These schools have shown a commitment to the Thinking School approach over time and their practice has been positively evaluated by the assessors from the University of Exeter. A total of 26 surveys were submitted by accredited schools, though 4 did not answer all the questions. The survey was

completed anonymously and the survey brief suggested that thinking leaders should consult colleagues regarding answers. The minimum time to complete the survey would have been 30 minutes but with consultation would have taken considerably longer. A copy of the survey is available in Appendix A.

Summary of Key Findings

- 100% of primary and 87.5% of secondary accredited schools are satisfied with the Thinking School approach: none are dissatisfied.
- 90% of all accredited schools reported an improvement in the quality of lessons: none have seen lesson quality adversely affected.
- 89% state that the Thinking School approach raises attainment: 3.5% state that it does not raise attainment.
- 96% used lesson observations as one of the factors when making their judgement on attainment.
- All five major Thinking School International programmes are reported to be highly effective.
- 82% of accredited schools would welcome more support with their evaluation methods.
- Benefits greatly outweigh issues:
 - o Common major benefits include the whole school approach, independence and learner ownership, lesson quality
 - o There are some sustainability issues for some, for example the training of new staff.

The Survey – Key Areas

A. Satisfaction with the Thinking School approach

The first table shows the levels of satisfaction of accredited schools with the Thinking School approach. Each school was asked to give a score from 1 being very high, to 5 being very low.

Table 1: Levels of satisfaction with the Thinking School Approach

	High		Low		
	1	2	3	4	5
Accredited primary	64%	35%	0	0	0
Accredited secondary	75%	12.5%	12.5% (1 school)	0	0
All accredited schools	68%	27%	4.5% (1 school)	0	0

22 accredited schools completed this question: 15 were highly satisfied and 6 reported good levels of satisfaction. This very positive endorsement is reflected in the long term commitment these schools have made to the Thinking School approach. Only one school, a secondary, was neither satisfied nor dissatisfied and no reason was given. All of the accredited schools declared they had adopted a whole school approach to the teaching of thinking.

“You’ve got to jump in with two feet, it’s got to be a whole school approach, otherwise it won’t work,”
Patrick Affley, Headteacher, Christ the King Primary, Cardiff.

In Table 2 schools were asked to elaborate on their decision regarding levels of satisfaction in Table 1, by giving a score from 1 to 5 on given aspects of the school that had been positively affected by the Thinking

School approach. A score of 1 can be considered very good and 2 good. The separate primary and secondary figures show the number of schools at each level. The figures on the right for all accredited schools are in percentages. The results here explain why there is such a high level of satisfaction with the approach.

Certain of the aspects in table 2 relate to the “Six Starting Points” of the TSI programme “Growing Thinking Schools Guide.” For example, consider the following positive results: Pupil Involvement 96.5% and Collaborative Learning 81.5% - Collaborative Learning starting point; Questioning Skills of Teacher 86.5%, Questioning Skills of Learners 86%, Reflection on Learning 90.5% - Reflective Questioning starting point. All of these eleven aspects are very positively endorsed.

Table 2: To What Extent Have the Following Aspects Been Positively Affected by the Thinking School Approach in Accredited Schools?

1 High to 5 Low	Prim High				Low	Sec High				Low	All High %	%	%	%	Low %
	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
Pupil Self-confidence	5	7	1	0	0	3	3	2	0	0	38	47.6	14	0	0
Pupil involvement	8	6	0	0	0	1	6	1	0	0	41	54.5	4.5	0	0
Behaviour and respect	3	4	4	3	0	1	3	1	2	0	19	33	20	24	0
Quality of lessons	4	8	1	0	0	4	3	1	0	0	38	52	9.5	0	0
Teacher morale and motivation	2	10	2	0	0	0	6	1	1	0	9	73	13.6	4.5	0
Teacher initiative	4	8	2	0	0	0	6	1	1	0	18	63.5	13.6	4.5	0
Collaborative learning	9	3	2	0	0	1	5	2	0	0	45.5	36	18	0	0
Creative thinking/ learning	4	5	1	0	0	3	4	1	0	0	39	50	11	0	0
Questioning skills - teacher	8	4	2	0	0	4	3	0	1	0	54.5	32	9	4.5	0
Questioning skills - learner	5	8	1	0	0	1	5	1	1	0	27	59	9	4.5	0
Reflection on Learning	7	7	0	0	0	1	5	2	0	0	36	54.5	9	0	0

Clearly in order to interpret individual school results, more information is needed. However, having the results from over 20 school communities does give credence to general trends across a range of schools. In Table 2 we see very positive results affecting the quality of teaching and learning for both pupils and teachers. The one exception is “Behaviour and Respect”, with 42% positive and 24% negative in this aspect this is an area for further investigation. One school experiencing positive benefits on behaviour is Monnow Primary near Newport in South Wales.

“Behaviour and attitudes to learning have improved considerably,” reported Meryl Echeverry, Headteacher.

What is happening at Monnow and in the 42% of schools that others can learn from? This result for “Behaviour and Respect” also does not equate with the high levels of satisfaction with Habits of Mind, Thinking Schools International major programme supporting dispositions development (see Table 11).

One may also identify from Table 2 the one secondary school that is currently struggling with the approach, hence the negative 4.5% score on several aspects.

Of particular note and significance are the very high scores for the positive effect on the following:

- Quality of Lessons - 90%
- Pupil Involvement - 95.5%
- Reflection on Learning - 90.5%
- Creative Learning & Thinking 89%.

It is also noteworthy to see high scores in other aspects which indicate improvements and a shift in classroom practice such as Questioning (both for Teachers and Pupils), Collaborative Learning and Teacher Initiative.

“Teachers have increased their capacity and have become better equipped to provide lessons which challenge and stimulate children. They are constantly striving to improve their own practice and this has led to greater collaboration and shared practice,” Carol Lawrenson, Headteacher, Spinney Avenue Primary, Widnes.

B. Attainment

The question of attainment and whether the Thinking School approach positively affects standards is extremely important for all stakeholders. The question is not an easy one to answer as many leaders pointed out: the Thinking School approach is just one of a range of strategies schools adopt to improve classroom learning standards. However, of the 26 accredited schools who answered this question, 23 were confident enough to say that the approach does raise standards. The full results are:

- 1) Yes, Thinking School raises attainment : 89%
- 2) No, Thinking School does not raise attainment : 3.5%
- 3) Unable to answer : 7.5%

“It is incredibly difficult to link the development of thinking skills with the results achieved by students, having said that, GCSE results, A2 and IB results have all shown an upward trend over the five years we have been involved with the programme,” Richard Coe, Assistant Headteacher, The Rochester Grammar School.

Paul Fleming, Thinking School leader at Sedgefield Community College in County Durham, reported the following improvements in his school which was accredited in 2012. *“School achieved 64% A*- C in summer 2010. School achieved 66% A*- C in summer 2011. School achieved 81% A*-C in summer 2012. We hope to ensure another increase in results in summer 2013.”*

S.K. Tamber of Wood Green Academy in Wednesbury found a similar impact, *“Summer 2012 public examination results were our best ever. 83% of all Year 11 students achieved 5 or more GCSEs grades A*-C, 71% of Year 11 students achieved 5 or more GCSEs A*-C including English and Maths. (Last year’s results 2011: 59% of all Year 11 students achieved 5 or more GCSEs A*-C including English and Maths.) In our*

recent Ofsted inspection 2012 we sustained our “Outstanding” status, achieving a Grade 1 in Teaching and Learning and all other categories.”

A further anonymous survey submission had seen a sustained improvement over a longer period:
“Sept 2005 73% 5 A-C GCSEs , 67% 5 A*-C including English and Maths. In the top 50% value added.
 Sept 2012 99% 5 A*-C GCSEs, 89% 5 A*-C including English and Maths. In the top 5% value added.”*

Primary school leaders also report a positive impact on SATs results: *“Attainment in SATs at the end of KS1 and KS2 has improved,”* Sarah Evans, Thinking Leader, Penn Wood Primary, Slough.

“Higher % of children achieving above national expectation in both key stages, ” Rose Cope, Thinking School leader, Kingsdown and Ringwoud Primary, Kent.

Only one school reported that the approach did not raise attainment. It could be queried whether there were other additional factors influencing the issue with standards in this school, but further investigation would be needed to substantiate any such claim.

The schools were asked what evidence they had considered in making their decision regarding attainment in a range of areas. The table below (Table 3) records 87% of all accredited schools used feedback from pupil consultations and an even higher 93% in accredited primaries. This confirms that one key feature of a Thinking School is in place i.e. schools in which pupil views are highly valued. It is also of significance that the schools have almost unanimously (100% in secondary schools and 93% in primary schools) made their decision in light of the quality of lessons. The approach clearly positively impacts teaching and learning.

There are also some interesting questions raised regarding the contrasts between primary and secondary practice. For example, 87% of primaries have considered pupil work when measuring attainment but only 40% of secondary. It would also appear that from our sample of accredited schools that teacher assessment and teacher tests carry more weight in primary schools when making decisions on attainment.

Table 3: Evidence considered to prove affect on attainment

	Public exams / sats	Teacher tests	Teacher assessments	Pupil interview & cons.	Teacher research & feedback	Lesson observation	Pupil work	Other
Primary (14)	78%	57%	87%	93%	57%	93%	87%	Attendance 14%
Secondary (10)	70%	30%	60%	80%	50%	100%	40%	
All accredited schools (24)	75%	46%	75%	87%	54%	96%	66.5%	Attendance 8%

Thinking Leaders were asked to comment on their findings regarding attainment and they are recorded in Table 4. The number recorded next to the comment denotes the number of leaders making this comment, for example, 5 primary leaders commented upon improved pupil independence as an impact of the Thinking School approach and this had supported raised attainment.

Table 4: Leaders comments regarding attainment:

	Comments
Accredited Primary	<p>Hard to be sure (3)</p> <p>Literacy-Writing exceptional (4)</p> <p>Pupils independent (5)</p> <p>Reflective (2)</p> <p>Teachers say yes</p> <p>Teaching improved</p> <p>Some outstanding</p> <p>Thinking & Learning ability</p> <p>Growth mindset</p> <p>Resilience</p> <p>Attitude</p> <p>Collaborative</p> <p>Steady improvement in exams over time</p> <p>Consistent results; Good effects</p> <p>Tools, transferrable skills</p> <p>KS1,2 result steadily improving</p> <p>Lower ability KS1 more engaged</p> <p>Higher % above expectations</p> <p>Positive on all types of assessment</p> <p>18% rise in T assessments</p> <p>Greater depth</p>
Accredited Secondary	<p>Hard to be sure (3)</p> <p>KS4 T Leaders performed better than peers in exams</p> <p>From 64% A-C 2010 to 81% a-c 2012</p> <p>Results improve with ability to use tools</p> <p>Write from Beginning</p> <p>Particularly IB</p> <p>Presentation skills improved</p> <p>Confidence</p> <p>Transferrable skills</p> <p>Problem solving</p> <p>Good indicators</p> <p>Special – Speaking & Listening</p>

It is interesting to emphasise that schools have noted attainment improvements in specific areas. Wellington Primary in Hounslow saw a dramatic improvement in boys' reading, for example, *"We found a 37% increase in the boys' scores in the reading paper: it was phenomenal,"* Kuldip Kahlon, Deputy Head.

Lynne Finn, Headteacher at Beechwood Primary in Runcorn, also noted improvements in Literacy and more specifically in writing, *"By the end of Key Stage 2, although outcomes reveal a spiky profile due to our small numbers, we always exceed our target and many children achieve their challenge target in SATs. Ofsted recently described our achievement in Literacy as exceptional. We perceive one of the biggest impacts to be on writing standards. Data available should you require it."*

Rose Cope, Kingsdown and Ringwould Primary, states that raised standards are, *"Particularly noticeable in written work, with the use of thinking maps to build high quality pieces of writing. Structure and text*

organisation has improved at both key stages. In Numeracy the ability to “Use and Apply” has been improved through the introduction of Building Learning Power and Habits of Mind. Children are dramatically more resilient in their learning and keen to take risks, which has ensured the use of language has improved. In KS1 lower ability academic children have been more engaged in their learning and as such there has been an increase in them achieving 2Cs in Writing and Maths.”

A large number of schools commented upon increased learner independence and changes in classroom culture not only impacting standards but also the way in which results are achieved.

“Our results in statutory examinations were always very good, so I don’t feel that the Thinking for Learning programme has affected these. However, we used to achieve these results much more through a coaching approach, and felt students’ independence was quite limited. Our T4L programme is slowly shifting the balance of responsibility from teacher to student and helping students to become more self-aware, independent learners. We introduced it from a qualitative rather than a quantitative perspective,” Anna Jordan, Thinking Leader, Derby High School.

In Table 5 we see recorded responses to the question whether specific groups of pupils have been more noticeably affected in terms of attainment. The figures do not indicate, for example, that only 46% of accredited primaries thought that higher ability learners were helped by the Thinking School approach, but that 46% of these schools felt that higher ability learners were especially benefiting.

Table 5: Specific Groups especially supported by Thinking School Approach

	Higher Ability	Lower Ability	Male	Female	Specific Age Group	Pupil Premium	Other
Accredited Primary 13 schools	46%	54%	54%	15%		15%	SEN 15%
Accredited Secondary 9 schools	44%	67%	33%	22%	44%		Visual Learners 11%
All Accredited 22 schools	45%	59%	45%	18%	18%	9%	SEN 9% Vis Ls 4.5%

One group commonly reported to be supported in improving their learning through the support of Thinking School strategies are lower ability pupils and pupils with special educational needs. Judith Stephenson, Thinking Leader from Barbara Priestman Academy, an accredited special school in Sunderland made the following comments:

“It is difficult to prove that the Thinking School approach has had effects on our results, but the external moderator for the Speaking and Listening part of English GCSE was extremely impressed with our students and how articulate they were and how they were able to reason and justify. Also in terms of students with Autistic Spectrum Disorder our students tend to be quite rigid in their way of thinking but the strategies we have put in place, especially the visual ones have helped them to see the curriculum as a whole and have helped them transfer skills from one area to another. The maps are very structured and they like that. As well as the tools from Thinking Schools we have also implemented Dramatic Enquiry across the school and the students really enjoy this. This has helped them with flexibility of thought and has helped them argue

and debate in a structured but relevant way and they are beginning to see things from different people's perspectives, again something that the students with ASD find very difficult. Students have been interviewed about the various thinking tools and the impact they think they have had upon their learning."

An interesting project at Oakwood Park Grammar in Maidstone has also impacted on a specific group of pupils. The boy's school, with the support of Professor Burden from the University of Exeter has developed a pilot qualification in Thinking Skills. Boys who took this qualification are now involved in activities around school as 'Student Thinking Leaders'.

Lynn Western, the Thinking Skills Co-ordinator at Oakwood Park explains: *"The thinking skills qualification required the boys to research thinking skills, research the impact of thinking skills on their own learning, research the impact of thinking skills on others' learning and go into primary schools and teach. They had a lot of input into how the course developed which really built their confidence."*

Lynn Western also notes the impact on GCSE performance when these students, who were of mixed ability and from one particular form, sat their examinations last summer... *"When we analysed their GCSE results it looks like that particular cohort who took the thinking skills qualification actually have got much improved results over the rest of the year group."*

Evidence suggests that the depth of understanding of the Thinking School approach, their commitment, new responsibility and opportunity to teach others has had a significant impact on their attainment. Some of this group are now involved in supporting a new group working towards the qualification.

C. Thinking Schools International Strategies

The purpose of a further section of the survey was to gain feedback on the success of the programmes taught to schools by Thinking Schools International. The next tables detail the order that schools introduced the programmes. We can see from the data in table 6 that the most popular starting point for accredited primaries has been Edward de Bono's Six Hats/CoRT skills. However, in secondary school the almost universal starting point has been David Hyerle's Thinking Maps. What this information doesn't include is whether these programmes were introduced by an external trainer, such as Thinking Schools International or whether the school put together their own training. Some schools will consider they have sufficient expertise or try to cut costs by leading their own training. The impact of the quality of training on successful classroom practice is another potential area for further research.

Tables 6, 7, 8: Order of Introduction

Primary Accredited Schools

Table 6	1 st	2 nd	3 rd	4 th	5 th	Not used
Thinking Maps	4	11	1	0	0	1
Habits of Mind	4	1	4	3	3	2
P4C/C of E	1	2	3	3	4	3
6 Hats/CoRT	6	2	4	5	0	0
Questioning	1	1	4	5	3	1

Secondary Accredited Schools

Table 7	1 st	2 nd	3 rd	4 th	5 th	Not used
Thinking Maps	9	0	0	0	0	1
Habits of Mind	1	3	0	2	0	4

P4C/ C of E	0	1	2	2	3	2
6 Hats/CoRT	0	2	4	3	0	1
Questioning	1	2	3	1	1	2

All Accredited Schools

Table 8	1 st	2 nd	3 rd	4 th	5 th	Not used
Thinking Maps	13	11	1	0	0	2
Habits of Mind	5	4	4	5	3	6
P4C/ C of E	1	3	5	5	7	5
6 Hats/ Cort	6	4	8	8	0	1
Questioning	2	3	7	6	4	3

The order of introduction question was also included to examine the relationship of order to the satisfaction with the programmes and perceived importance of the programmes, which are recorded in tables 9, 10 and 11. Although feedback is very positive on all programmes it appears that Philosophy for Children & Community of Enquiry are relatively lower in terms of satisfaction and importance. However, table 8 reveals this area has tended to be introduced more recently, thus it could be an indication that the reason for a lower score in Tables 9, 10 and 11 is that these strategies are less embedded than others.

Tables 9, 10, 11: Average satisfaction and importance scores. 1 high / 5 low

Table 9: All 15 accredited primary schools	Satisfaction	Importance
Thinking Maps	1.2	1.3
Habits of Mind	1.8	1.5
Philosophy for Children/ C of Enquiry	2.0	1.8
6 Hats / CoRT	1.6	1.6
Questioning	1.3	1.3

Table 10: All 10 accredited secondary schools	Satisfaction	Importance
Thinking Maps	1.25	1.8
Habits of Mind	1.6	1.7
Philosophy for Children/C of Enquiry	1.8	2.4
6 Hats/ CoRT	1.4	1.7
Questioning	1.2	1.25

Table 11: All 25 accredited schools	Satisfaction	Importance
Thinking Maps	1.2	1.2
Habits of Mind	1.7	1.5
Philosophy for Children/ C of Enquiry	1.9	2.0
6 Hats/ CoRT	1.5	1.65
Questioning	1.25	1.2

The above tables reveal an overwhelming endorsement of all of these Thinking Schools International strategies by accredited schools who have been using many of them over a sustained period. A further investigation and study, not covered by the survey, could be made into how these strategies integrate effectively in the classroom.

D Evaluation Methods

School leaders were also asked for feedback on their use of evaluation strategies of the Thinking School approach and specifically on the use of Professor Burden's "Myself As A Learner Scale" or MALS.

Of the 22 accredited schools 8 said they had used MALS and 3 non-accredited schools also reported that they used it. Of this total of 11 schools 8 were primary and 3 secondary schools. The 3 non-accredited schools have used MALS at the start of their journey and will look to use the scale again at a later point to identify change. At this point, then, they have no feedback to offer. The following findings were made by the 8 accredited schools: 1 school found a significant improvement in learner self-perception; 2 schools found a general improvement in learner self-perception; 3 schools found an increased self-awareness in learners.

But this indicates perhaps an issue with how to use the scale. Professor Burden points out that the scale is not intended as a simplistic measure of progress in terms of increased scores in self-perception as a learner through the completion of questionnaires by individuals sitting alone unaided. As one school discovered, the completion of the scale and its impact is improved greatly by discussion with an adult. Another school found MALS helpful in identifying issues of a lack of self-confidence with a significantly low scoring child and through a carefully considered support programme in partnership with the parents were able to address the causes of the issues. MALS used in discussion with an adult would be most suited to a school with an embedded coaching practice. Another school found a similar impact to the Maidstone project outlined previously i.e. that the highest scorers on MALS had a lead role in the school: responsibility boosts self-confidence.

There is clearly a need for better understanding in how to use the scale. One secondary school abandoned the use of MALS, for example, as the starting results were too positive. One leader felt that the notes provided with MALS were too "academic" for teachers to access. Perhaps this identifies a need for the inclusion of the use of MALS and other methods of evaluation in initial Thinking School training. MALS would be more effectively used if the staff implementing the tool were properly trained. However, this would have time and cost implications. To aid progress Richard Coe at The Rochester Grammar has agreed to carry out extensive and systematic use of MALS.

Table 12: Levels of Satisfaction with Own Evaluation Methods

	High				Low
	1	2	3	4	5
All accredited primary	14%	29%	43%	14%	0
All accredited secondary	25%	12.5%	50%	12.5%	0
All accredited schools	18%	23%	45.4%	13.6%	0

The point regarding training and support in evaluation methods is confirmed by the findings in table 12 which reports on school satisfaction with their own evaluation methods. The results here are much less positive than any other part of the survey. A similar picture was found in non-accredited schools. 82% of the accredited schools, experienced in the Thinking School approach stated that they would welcome

support with evaluation strategies. Schools need to have a range of clear evaluation strategies in place when they embark on their learning journey.

E Major Benefits and Issues

The final section of this report will highlight the benefits and issues of the Thinking School approach highlighted by Thinking Leaders in the survey. Schools have not included **all** of their benefits or issues, but only those they perceive as “major”. Table 12, below, reveals that the benefits schools have experienced far outweigh the issues. The number next to the benefit or issue indicates the number of schools making this comment.

Table 12: Major Benefits & Issues of Thinking School Approach

	Major Benefits	Major Issues
All accredited Schools 14 primary 8 secondary	-Whole school approach - Common language - Cohesion 10 - Independence 7 - Classroom improvements 5 - Curriculum delivery 5 - Parent support 4 - Ownership 5 - Links to other schools/ university 4 -Teacher motivation/ training / innovation 4 - Collaboration 4 - Creativity 4 - Confidence 4 - Enabling skills 3 - Enjoyment 2 - Attendance 2	- Training new staff/students 6 - Engaging all teachers 5 - Time 4 - Cost 3

A common problem for Thinking Schools is sustainability, hence the issue of the training of new staff. Larger schools are more likely to have accredited in-house trainers and the capacity to work alongside new colleagues. Unless new staff and students receive quality training, the whole school practice will be affected. One possible solution may be the development of a mutually supportive network of Thinking Schools who are willing and able to meet the training needs of the group, such as the existing group led by the Rochester Grammar. Alternatively it may be productive for Thinking Schools International to explore the demand for regional training courses for new staff. Maintaining the momentum of practice and the engagement of all staff is also part of the sustainability problem. Again schools in networks can support each other, sharing good practice. Some schools have had success in this area by offering fresh learning challenges to their staff and by providing opportunities for further study, qualifications and career development.

An emphasis early in this report was on the impacts of the Thinking School approach on attainment, particularly reflected in public examinations. This is because exam results are a key factor in how school performance is judged, particularly in England. This will be a major influence on decisions schools make

regarding which teaching and learning strategies to employ, including thinking strategies. However, although public exams are limited in their demands on students to use higher order thinking strategies, the evidence from the vast majority of accredited schools in the survey, 89%, points to the Thinking School approach supporting exam results.

In addition to attainment, Table 12 again demonstrates the wide ranging benefits of the Thinking School approach. It shows, for example, the massive endorsement of the whole school approach which introduces a common language for learners and cohesion to the work of the school. Sarah Evans, Penn Wood Primary, Slough notes the difference made to confidence and independence: *“Results are more evident in pupils becoming: more confident; being able to think outside the box; asking more questions; making connections in their learning; being able to reflect on their own learning more confidently; starting to know what their next steps should be; becoming more independent learners.”*

Carolyn Evans, Headteacher at Rhydyppenau Primary in Cardiff, records the impact on attendance and collaboration, *“Specific benefits include a 50% reduction in absenteeism, also, children are definitely more confident in their learning, more autonomous and more creative in their approach to their work. As a result the school is in a stronger position to implement the Foundation phase, the Skills Framework and a more active curriculum within Key Stage 2. We have also noted improved transition as a result of collaborative work with the high school which implements the same thinking tools.”*

Monnow Primary has also noted the effect on attendance and additionally on attitude. Meryl Echeverry writes, *“Attitudes to learning have changed, which has had a direct impact on pupils’ attendance and behaviour.”*

Carol Lawrenson, Headteacher at Spinney Avenue, Widnes also identifies independence as a benefit. Furthermore, she points to the benefits for governors and support of parents, *“Pupils are becoming very independent and interdependent. Their confidence has grown and they are very keen to make contributions to school life. They find learning fun and stimulating and like the way in which the curriculum offers opportunities for them to explore and demonstrate their learning in a variety of ways. Governors can see the benefits of the way in which we approach teaching and learning when they look at data and end of year results. Parents have commented that their children love coming to school and are excited about their learning.”*

Rose Cope of Kingsdown and Ringwould Primary has also seen a positive response from parents, *“The parents have been pleased with the impact this has had on independence and a loss of the de-motivation that many of them saw! The children are keen learners who see everything as an obstacle worth engaging with or tackling.”*

The last point made by Rose Cope is one that many leaders have made when interviewed, that a significant strength of the Thinking School approach is that learners’ thinking, both staff and students, is purposeful and likely to lead to active improvements in the school.

The Rochester Grammar School: How we became a Thinking School – an overview

It is with great pride that we presented our portfolio of evidence to the Cognitive Education Centre at Exeter University in December 2009. The Rochester Grammar School is a selective girls' grammar school in Medway – an area with its fair share of socio-economic issues. We have a mixed 6th Form. In 2008 the school was judged to be outstanding in all areas by OFSTED.

Why did we become involved in working towards accreditation as a Thinking School?

The decision to put thinking at the heart of our school was taken in the academic year 2005-6. At this point, the school had just achieved some of its best results ever at A level and GCSE, but it was felt by the leaders of the school that somehow we were still not challenging the minds and creativity of the students. Ges Hartley, the Deputy Head Teacher, began by planning and implementing a number of cross curricular projects or 'rich tasks', as they have now become known. The first task was based on Fibonacci and brought together mathematics, music, ICT, drama and Media in a new and innovative way. The project was called the *Phi factor* and was featured in the TES. Our students were, finally, having to transfer skills from different disciplines and apply past knowledge, in order to move forward with their creative projects. A focus was placed on group work and skills of collaboration (interdependence as this would later be known). Students were assessed on the quality of their work (posters, compositions, film sequences and presentations) but were also asked to quantify levels of creativity and personal growth.

The success of the *Phi factor* led to further 'rich tasks' on migration (this was called *Crossing Borders* and combines History, Geography, Music and Art) and an independent project for year seven based on the buildings of the South Bank, entitled *Perspectives of London*. It was clear that the school was beginning to look at learning in a new light and that students were being asked to reflect on and value intelligent dispositions and thoughtful strategies as well as just summative outcomes.

How did Kestrel Education and Exeter University help us develop our new direction?

After success as a lead practitioner in presentation skills and creative thinking, Richard Coe was appointed as Director of Independent Learning and charged with researching possible programmes for the school. We were made aware of Kestrel via the TES and a CPD flier that came to the school. Richard attended a Kestrel welcoming conference in Watford, where their support programme was introduced and some of the techniques and tools for developing a Thinking School were discussed. Professor Burden from the Cognitive Education Centre at Exeter University was present and explained the links between the university and Kestrel in

a move to make schools more thought-full. We were encouraged to join the network, which is when we decided to ask Kestrel to send in a consultant to help with our planning.

A Kestrel Consultant, was therefore asked to come and discuss a possible programme in March 2007 and his visit was met with much enthusiasm. Richard then attended a follow-up session with Kestrel in May 2007 and was extremely impressed by the speakers from schools and from Exeter University.

How did we put our plans into practice?

By summer 2007, six teachers had been trained as trainers for Thinking Maps and all eight maps were trialled by this Drive Team. The following year Thinking Maps were introduced across the whole curriculum at all key stages by all teachers. This was reinforced through performance management targets. Despite some initial reluctance on behalf of both staff and students (who likes change?) the maps started to have a visible impact on the processing of knowledge and thought by students. It was evident from the exemplar material and observations that students were beginning to understand the link between the visual tool and the actual thought process. For example the simple bubble map focusing on adjectives really led to an improved descriptive quality of student's written work. Previously, they had always taken description for granted and therefore had not given it any thought. By focusing their thoughts on description via the bubble map their vocabulary became richer and more considered. As a result, the Maps are now seen as vital tools, held in high regard by both staff and students, as recent reviews and surveys have shown.

During 2007-8, Richard attended further Network conferences - on Creativity in Exeter and on Habits of Mind in Birmingham. Art Costa's work on Habits of Mind was such an inspiration that further reading and research was undertaken on how to implement his ideas. Staff were surveyed and introduced to the concept and six Habits were chosen as 'termly themes' for 2008-9. Habits of Mind were introduced formally to Years 7-11 through our vertically-integrated house system (another initiative to promote thinking and creativity across the school). Weekly sessions introduced different ideas on the Habit for that term and asked students to reflect on their own behaviours, to make links with their own experiences and the wider world and to partake in a wide range of activities such as role play, creating songs and dances, poster competitions, using Thinking Maps, group discussion or analysing film clips. Students were invited to plan sessions alongside the Director of I-learning and an online forum was introduced so students could comment on the sessions and how they might be improved or adapted. The Head Teacher, Heads of Key Stages and Heads of Houses supported the termly Habits through assemblies, notice boards and commendations.

The Director of I-learning and the new Assistant Head Teacher in charge of Teaching and Learning (Gwynn Bassan) monitored the quality of these sessions

through learning walks, termly number-crunching of evaluations, and reading of the online forums. Richard also held open sessions for the most cynical students to come and openly express their views. These students were used to proof-read the next terms lessons and give suggestions on how these might be improved or amended. New students and staff received training on Thinking Maps and CPD sessions were run to develop the use of Maps in the classroom and curriculum areas.

A new stage in our development came with the introduction of Thinking Keys to a Thinking Club for Teachers. Developed by Tony Ryan, the Keys are twenty ways, all titled and having a specific function, to unlock creative and critical thinking across the curriculum. (More details on the Kestrel website.) Richard then ran a twilight CPD session on the Keys, which was seen as a valuable and creative way to incorporate simple but effective thinking tasks into all lessons. A further CPD session focused on the Habits of Mind (termed Habits of Excellence here at RGS to link with our mission statement) where successful strategies were shared as part of a Thinking Carousel. Teachers from a range of curriculum areas took one idea and shared it with small groups. These included incorporating Habits of Mind into learning objectives, assessing the Habits and using Habits to evaluate trips or workshops.

Developing Thinking Maps and supporting Habits of Mind were again integral features of all staff performance management targets, which gave the approach some real gravitas and led to rigorous monitoring by the Director of I-Learning, and by all line managers and curriculum leaders. Richard led two workshops for staff on Thinking Maps, inspired by a two day conference with David Hyerle in Durham.

In the summer of 2008, all curriculum areas were asked to choose from the sixteen Habits those that were most relevant to or pre-requisites for their specialism. This was followed by a really-focused day's training run by Richard Coe and consultants from Kestrel Education. Richard Cummins, from Kestrel, was also present after being impressed with the work we had shared at regional conferences. The focus for the day was on how to promote and then assess the key habits for each curriculum area, finished by presentations from all teachers on how they were going to tackle this. The level of work was of a very high standard and praised by the Kestrel consultants. Assessing key Habits of Mind is a focus for 2009-10 and again is an integral part of all teachers' performance management.

After attending a national conference on PLTS, and researching P4C and the work of Ian Gilbert, it was decided by Gwynn and Richard to introduce Thunking Online for the most gifted students. (A Thunk is a question that makes your brain hurt and asks you to look at life from a new angle or perspective. For example 'Is a broken down car parked?' 'Is there more future or past?' 'Where do shapes start?') After a successful trial, it was introduced via some funky postcards to all staff and students. It has taken off better than we could have hoped and we can now all think and debate together online, off the curriculum, with age setting no boundary!

What have we learned so far, and how are we planning to continue and develop the work we have done?

During 2009-10 the Director of I-Learning (recently promoted to Associate Assistant Head Teacher) is researching ,with ten teachers, further areas such as Community of Enquiry, Six-Hat Thinking and Eight-Way Thinking. These teachers opted freely to take part in this research group, which was the most popular choice for CPD this year. The teachers are from across the curriculum, including business studies, psychology, French and technology. These strategies will be piloted and evaluated by these teachers throughout this academic year. It is likely that one of these will be introduced across the school in 2010-11.

Beyond Rochester, Richard and Gwynn have also been trained as Kestrel Consultants, and they have both run workshops at the National Thinking Conference. Richard has also presented at a Habits of Mind conference for *Tomorrow's Learning*. The head teacher has recently presented the work we are doing to an International conference on the IB Diploma in Seville. Richard has also published an article for *Teaching Drama*, a Rhinegold publication which can also be found on the Kestrel website.

A major development in the last year has been devising a 'learning tree', devised by Gwynn Bassan, which really links Habits of Excellence to what we call the RGS Learner Profile. The learner profile parallels the Aims of the IB, with the intention of students leaving this school as well-rounded human beings (effectively communicating, knowledgeable, prepared to take risks, caring, principled etc). There are ten aims in total and they can be seen as the final outcomes, or branches of the tree. The Habits of Excellence are seen as the roots – those behaviours that need to be practised in order that the outcomes be achieved. This development, led by Gwynn, has brought all of our initiatives together under one core purpose, and has given the school a clear vision for the future. This learning tree is in all classrooms and staff offices as a constant reminder of our vision.

Our main focus for the future is to embed ourselves as a Regional Centre for Kestrel Education and continue our outreach work with local primary schools. Assessing the Habits of Excellence is a performance management priority, as is developing other thinking strategies with our partners, such as Thinking Keys, Bloom's Taxonomy and Thunking. Richard and Gwynn would also like to incorporate the various tools and strategies into teacher and student planners and enhance the use of ICT in thinking. This will be aided by three lead practitioners who are focusing on e-portfolios, interactive whiteboards, and online thinking activities and resources for mathematics.

I hope that you find this journey an interesting one that helps you plan out your school approach. Becoming a thinking school is a very challenging but worthwhile road to take. A change of ethos across an entire institution is a massive task emotionally, logistically and financially. That is why becoming part of the network

initiated by Kestrel Education has been such an important part of the process. Just when you are beginning to question why and how you will be able to affect change you are revived by either the possibility of a network meeting, consultant help or online resources. Kestrel have been there every step of the way - but what is most important is that they do not believe in a one-size-fits-all model. They understand and appreciate that each school is different, and so must find their own way to embed thinking across their institution.

Richard Coe

Assistant Head Teacher

The Rochester Grammar School