Thinking Skills: a whole-college approach

A reflection of our journey with ITC as lead trainer at Earnshaw State

The challenge:

Mid 2012, Earnshaw State College identified the **explicit teaching of thinking skills** as a key component that we wanted to improve within our Pedagogical Framework. A research team was established, with a project brief focussed on the development of a **thinking skills scope and sequence** for the college.

The research team identified, and engaged with, a number of areas, including: current educational research; the ACARA General Capability: Creative and Critical Thinking; QSA Common Curriculum Elements (CCEs); and an evaluation of frameworks used in education settings around the world.

The outcome of 6 months research, development and ongoing feedback from staff, was the *ESC P-12 Scope and Sequence of Thinking Skills* (Image 1). The framework identified 6 levels of thinking, divided into two-year junctures, each with multiple learning statements for each juncture.

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Higher Order Thinking Skills Scope and Sequence 2013

Creative and Critical Thinking ACARA		Thinking Skills	By the end of Year 1 students:	By the end of Year 2 students:	By the end of Year 4 students:
Identifying, exploring and clarifying information	Identifying, exploring & clarifying questions.	**Inquiring** Identifying, exploring and clarifying questions	*With teacher guidance,* **develop simple questions** for a whole-class or group investigation or response	**Pose questions** to explore issues in their own world	**Pose questions** to investigate issues within and beyond their own world.
	Gathering, Organising and Processing Information	**Gathering and Organising** Gathering, organising and structuring (arranging) information	*With teacher guidance,* **collect information** from a range of sources, including using their senses in making observations.	With teacher support, **collect information** from a range of sources to answer questions.	**Collect information** from a range of sources – including observations and findings from their own investigations.
			With teacher guidance use a range of simple thinking tools to **gather, record and process** information.	*With teacher guidance,* use a range of simple thinking tools to **identify main ideas , clarify meaning** and organise information based on similar ideas.	Apply thinking strategies and tools, as modelled and recommended by teacher to **organise, process and clarify** information and concepts
		Comprehending Processing and understanding information.	*With teacher guidance,* begin to **look for simple patterns** in their observations by classifying familiar items and by looking for similarities and differences.	**Compare and contrast** points identified within information collected	**Sequence and summarise** information collected
				With teacher guidance, discuss **fact and opinion** in information.	Question the **validity of sources** when appropriate.
	Transferring	**Applying** Combine and Apply	*With support* **make connections** between new	**Use** relevant information from a previous experience **to inform** a new	**Integrate** available information to explo ideas.

Image 1: Snapshot of the Skills Framework.

Throughout the research, the team found further critical components that needed to be addressed alongside the thinking skills. These were the **behaviours and language** (especially the verbs) of thinking, and the power of **Graphic Organisers** in the teaching of, and development of, thinking skills.

Hence, the team developed two supporting documents. The first elaborated on the language and behaviours (Image 2), whilst the second identified Graphic Organisers by juncture and thinking skill. This document included links to samples of Graphic Organisers available online (Image 3).

At the beginning of 2013, a number of workshops were delivered to familiarise all staff with ESC Thinking Skills Framework and supporting documents. The workshops included a focus on the language and tools (graphic organisers) and were hands-on in nature. Staff feedback was positive and the majority of teachers were enthusiastic to begin using the framework and tools.

ACARA		Thinking Skills (with example)	Behaviours	Associated Language		
luating information.	tive reasoning ng a course of action.	**Analysing** Analysing, assessing and synthesising information to draw conclusions and inform a course of action Sample: Contrast building in the coastal zone with building in a river floodplain.	• Break information down into parts and show relationship between parts. • Determine key attributes or elements. • Make connections between information and ideas. • Evaluate information • Apply logical and inventive reasoning • Look for new patterns and connections • Modify responses • Predict possibilities and envisage consequences • Speculate on possible options and outcomes • Draw conclusions and design a course of action. • Interpret information from a range of perspectives.	analyse apply appraise argue arrange assemble break down calculate change classify collect compare compose conclude connect construct contrast correlate	criticize critique deconstruct demonstrate design develop diagram differentiate discriminate distinguish examine experiment expound extrapolate formulate hypothesise identify illustrate	infer integrate interpret judge manage modify organise outline plan predict prepare assumptions relate review select separate test

Image 2: Snapshot of the Language Framework.

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Higher Order Thinking Skills Tools: Scope and Sequence

Creative and Critical Thinking ACARA		Thinking Skills	By the end of Year 1 students:	By the end of Year 2 students:	By the end of Year 4 students:	By the end of Year 6 students:
Inquiring: identifying, exploring and clarifying information	Identifying, exploring & clarifying questions.	**Inquiring** Identifying, exploring and clarifying questions	KWL Chart What do we Know/Want to know/Have learned?	KWL Chart What do we Know/Want to know/Have learned? Think Pair Share	KWLH Chart What do we Know/Want to know/Have learned/How can we learn more? Question Matrix Primary	KWLH Chart What do we Know/Want to know/Have learned/How can we learn more? Question Generating Chart Research Planning Chart
	Gathering, Organising and Processing Information	**Gathering and Organising** Gathering, organising and structuring (arranging) information **Comprehending** Processing and understanding information.	Observation Chart KWL Chart Brainstorming	Sensory Details Chart Sequence Chain Mind map	Web Diagram Flow Chart Observation Chart Think, pair, share	Sequence Chart Non-Fiction Source Card Knowledge Chart
	Transferring knowledge into new contexts	**Applying** Combine and Apply knowledge, techniques, strategies, concepts, theories and procedures in new situations.		Prior and New Knowledge Chart	Main Idea Charts eg: Main Idea Chart Plus, minus, interesting	Conclusions Chart C.E.C Claim Evidence Conclusion Analogous reasoning

Image 3: Snapshot of the Tools Framework.

The issues:

We had all the right ingredients: a research-based model, verb-driven language, graphic organisers to scaffold student responses and staff commitment. However, it just wasn't 'gelling'. The initial enthusiasm for the framework dropped away as the practicalities hampered teachers. There were so many skills to teach, especially for staff teaching multiple year levels. At times, links to sites we had included in the document had to be updated and keeping up with the latest version of the framework was frustrating. When links did work, the process was lengthy: open the ESC document, follow the link, view the sample and then, more often than not, have to create our own version of the graphic organiser.

We ended up downloading samples to G:drive - but then they weren't accessible at home. We found varying confidence with, and understanding of how to use, the graphic organisers and staff tended to stick with those that were already familiar. Whilst we valued the explicit teaching of thinking skills, translating them into practice in the classroom was proving difficult. They frequently felt like an add-on and weren't underpinning planning. In their frustration, some staff went back to their own frameworks (eg: multiple intelligences, thinking hats) precluding the chance of a common language for students.

The turning point:

By Term 4, 2013, we had a new principal, Dave Boswoprth, with a strong vision for the college. Dave introduced Eric Frangenheim to the leadership team late in Term 4. Our college motto, 'Prepare today for tomorrow', encompasses what we want for our students. Critical and Creative Thinking feature strongly in all models of 21st century learning and 21st century skills.

Our introduction to the ITC Thinking Skills Framework, came via Eric's demonstration of **ThinkDrive**. Seeing ThinkDrive program was a "*lightbulb moment*" ... an answer to the 'clunkiness' of our word doc with embedded links. My immediate reaction was literally one of excitement, as I saw a professional, practical application and solution to all the components we had devised available to teachers in one place.

Eric also showed us the ITC Thinking Skills poster and this was the next pivotal moment. In developing our scope and sequence, we had over-complicated thinking skills. In trying to tease them out into junctures we had made them unwieldy. The simplicity of an all-in-one poster immediately highlighted the blocker created by the complexity of our scope and sequence.

All of the work we had tried to develop was now reflected in one visually accessible poster. However, the tool on its own does not translate into practice in teaching and learning, so we embarked on a journey with ITC.

A strategic approach:

Whilst Thinking Skills are incorporated within our Pedagogical Framework, and we already had a commitment to developing our practice in these areas, Dave took this one step further, developing an overarching statement about our purpose for committing to this project.

Thinking Skills Framework at Earnshaw State College
The framework comprises the six levels of Blooms that, together with the functional skills of English, Mathematics, Science, Social Sciences, The Arts, Health and Physical Education and ICT's, are essential to success in learning, life and work. In essence, the framework captures the essential skills of: managing self; managing relationships with others; and managing own learning, performance and work. It is these skills that when taught in sequence will enable young people to enter work and adult life as confident and capable individuals.

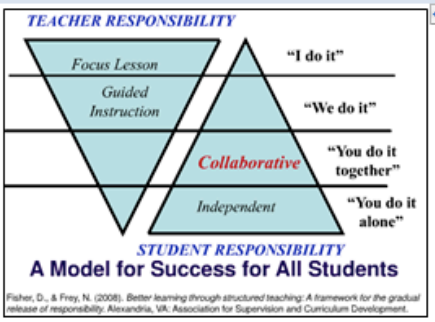
We took a two-pronged approach to making this happen: resourcing and professional development.

Resourcing:
We purchased a *2014 ITC Staff Planner* (the innovative teachers' companion) for all staff P-12. Strategically, this meant that all staff had the framework in their hands to begin the year. We also purchased an annual subscription to *ThinkDrive* (the digital version of the ITC Thinking Skills poster) and an *ITC Thinking Skills Framework poster* for each classroom.

Professional Development:
We really needed to strategise the approach to staff development to ensure an embedding of the framework, a common language across the college and a commitment to the project. Together with Eric, we drafted a proposal for a series of workshops aimed at developing in staff an understanding of the framework and tools.

Our professional development plan employed a *gradual release of responsibility* approach (Image 4), whilst HODs worked alongside Eric in a train-the-trainer model.

We are "walking the talk" at Earnshaw as we develop our capacity to imbed the explicit teaching of Thinking Skills P-12.
Our PD model follows our own model of instructional design:



I do – Focussed Instruction	*Eric teaching us the Thinking Skills Framework and introducing the tools.*
We do – Guided Instruction	*Eric demonstrating the use of cognitive and cooperative tools in the classroom.*
You do it Together- Collaborative	*Eric walking us through unit planning together.*
You do – Independent	*ESC working together to imbed the Thinking Framework in our planning and teaching.*

Image 4: Snapshot from Staff Memo

In Term 1, Eric ran workshops for all staff including the leadership team *(I do).* These provided staff with a solid knowledge of the framework and the tools.

Workshop 1. Establishing a Thinking Skills Framework at Earnshaw State College
Workshop 2. Strategies for Critical Thinking
Workshop 3. Strategies for Critical and Co-operative Thinking Part 1
Workshop 4. Strategies for Co-operative and Creative Thinking Part 2

Whilst Term 1 was aimed at developing a common understanding, there were staff who immediately began putting the tools into practice in the classroom, both the graphic organisers and the collaborative thinking strategies. Staff reported increased student engagement in the lessons where they utilised the tools and/or strategies.

Likewise some of the leadership team began incorporating the framework in PD and in staff meetings. Personally, I found that the framework allowed me to clearly articulate the purpose of the session, and the level of thinking I wanted from staff. The level of thinking was something that I had not fore-fronted in my planning of sessions in the past. Using the symbols from the poster in my PPTs allowed me to clearly articulate to staff which part of the session was information-giving and when they were required to analyse, evaluate or create.

In Term 2, we moved to the *We Do* phase. Workshops included:
Workshop 5. Demo lesson on The Reconciliation of Goldilocks and the three Bears.
Workshop 6. QCST Visual Stimulus Short response English Teachers to observe
Preparation for Workshop 7 Establishing 'The hook'
Workshop 7. Broad Brush Unit Planning: 7-step process

In workshop 5, Eric delivered a Demonstration Lesson over three periods. During the day, over 80% of our staff were able to observe at least one period. The purpose of this session was to demonstrate for teachers how easy it is to get students to use cognitive and co-operative thinking tools, without any prior training. Eric also ran a QCST Visual Stimulus: Short Response lesson for our senior students, which the English team was able to observe.

Feedback from both staff and students was incredibly positive. When asked what they learnt, student responses included: Positive thinking; How to work as a team; to look at evidence; new vocabulary; the meaning of reconciliation; about empathy.

Following this, teams of teachers met with Eric for *Broad Brush Unit Planning (*We do – Guided/Collaborative). Designed for teachers working with C2C or the QLD curriculum, staff engaged in a 1.5-hour highly practical and hands-on workshop that demonstrated how to create and plan units, using the Thinking Skills Framework and a 7-step unit planning process. Staff approached this unit planning with rigour. Light-bulb moments abounded as they delved deeply into the purpose of the unit, the intended outcomes, and the simplicity of using the framework to transform lower order learning into higher order applications, using the framework and tools. HODs worked alongside Eric for these sessions, developing the expertise to continue this work with staff.

In term 3, teachers were able to engage with Eric in micro-planning sessions. These sessions allowed teachers to
Work 1:1 with Eric on individual planning needs. Again, the staff was really thrilled with seeing new ways of incorporating higher order thinking.

In this last week, Eric gave us the last two pieces of the puzzle: a parent session, *"Thinking and Discussion around the Dining Room Table",* and a session for the senior Leadership Team, *"Presenting In-House PD using ThinkDrive".*

Eric presented to parents as part of our Parent and Community Engagement Series (PACES). Whist attendance was a little disappointing, those who were there gained a great deal of insight into the power of framing questions at different levels as well as using appropriate thinking tools. Alongside the workbook and PPT Eric shared with me, and the training Eric has provided, I will offer this workshop to parents again.

During the In-House PD session, Eric trained the senior leadership team in providing PD using the extensive video resources available in ThinkDrive. This session also enabled a re-establishment of our leadership and commitment, and the basis for developing our next-phase strategy: long-term embedding of thinking skills within our pedagogical framework.

Outcomes and Highlights:

In the short nine months since we first met with Eric and the ITC resources, we have seen some incredibly positive outcomes within the college. Not only have staff embraced the framework, there have been some innovative applications of the framework:

- Staff using the *Thinking Skills Icons* in their Homework Grids to highlight for students which activities require which level of thinking;
- Students critiquing each other's persuasive speeches using the language of the Thinking Skills Framework;
- Staff analysing the Australian Curriculum content descriptors in each unit to define which level of thinking is asked of students;
- Staff identifying within their teaching PPTs which level of thinking this part of the lesson is addressing.
- A focus on the verb in planning and assessment.
- We are hosting further workshops delivered by ITC i.e.: *Engaging Teachers at Staff Meetings*

Key determining factors that contributed to success:

- All staff having planners – during meetings we can reference the framework and tools and know that every staff member has them at their fingertips.
- All classrooms having the poster – staff know that when they go into a classroom the poster will be there to reference.
- Gradual Release Model – staff and the leadership team have been trained to carry on the work. Whilst we didn't set out with a train-the-trainer vision, this is what has occurred.
- At each workshop, the staff was provided with workbooks and the college was provided with the Power Points. This has allowed us to refresh and revise, as well as develop our own workshops (a vital component as we need to induct new staff to Earnshaw into the framework).