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A THINKING WORKBOOK FOR TEACHERS, NOT STUDENTS



This book is designed to help you be a master at teaching thinking. Its purpose is to train you to see, think and act in ways that are effective in developing the thinking of your students. It assists teachers of any level and subject area to set up a classroom that supports, encourages and develops good thinking.

It is not designed to do this by presenting classroom resources, thinking tools, blackline masters or exercises that teachers can take into their classroom to use with their students. Many teachers already have access to a large variety of thinking tools and resources. Yet, if the teacher does not have an overview of what a thinking class is and how it is developed they will not be able to create an environment where students' thinking can really be nurtured. There is getting fixated on the pretty baubles – the blackline masters and thinking tools picked up here and there – and then there is understanding the whole Christmas tree. The book is designed to help you get more of a sense of the whole Christmas tree.

One approach to focusing on the whole Christmas tree is to explore theories about thinking, the thinking curriculum and the thinking classroom. The bibliography of this book lists a number of useful theoretical texts, yet this book isn't about theory, but about practice. It is designed as a professional development workbook for teachers. If teachers are not practising the theory, they will not be able to create a thinking classroom. If they don't *do* the things needed to create a thinking classroom, it won't be created.

Creating a thinking classroom is about creating a culture change or a paradigm shift in how we view education and learning. We often relate to change in education as something hard – but perhaps it can be easy. With the support of the different ways of looking at teaching and learning presented here, and with persistence and a commitment to training, you can create a culture change in your classroom. You can create a thinking classroom.

This is a book filled with exercises and activities designed to develop teachers' ability to create a thinking classroom. However, if you just read the book it will be unlikely to make any real difference. Also, if you just use the exercises with your students it will not make any real difference for them. Creating a thinking classroom can only be done through systematic training and development of *teachers*. If teachers use this book as part of their professional development, and they engage in the exercises, practice the activities and change their perspectives and viewpoints, this will make a big difference in their ability to create a thinking classroom.

There are many ways to use this book as part of your professional development. For best effect I recommend having a group of teachers meet regularly throughout the year. The teachers should have something to read, exercises to try and skills to practice in their classrooms between meeting times. Then during the meetings they have time for feedback and group exercises. Meetings once per fortnight for an hour would work well, though more frequently would be ideal. It would also be useful if there were someone responsible for leading the professional development sessions and deciding what sections of the book to cover and what exercises to use at what times.

How to get the most from this book

There are certain principles about how to effectively train teachers to create a thinking classroom that are fundamental to this book. These principles explain why the book is set up in the way that it is. Knowing what these principles are and then following them will ensure you get the most from this book.

We learn to think well through a social process

One basic principle of this book is that learning to think well happens through a social process. Thinking together is fundamental. This means that this book is not for individual professional development: you can't get the benefit from this book if you are working on your own. This is a workbook for a *group* of teachers. It is designed to be used with others so you can actually learn to think together, which is necessary for learning to think well.

We learn to think well through a process of action, reflection and then new action

Thinking well is partly about thinking together, but it is also about reflecting on what is being done and coming up with better ways of looking at or doing things. To develop a true thinking classroom, teachers need to reflect on how their classes currently are, and reflect on new and better strategies and ways of looking at things.

To teach good thinking, the teacher has to be a good thinker

This is really about good teaching. You can't teach what you don't know. Trying to create a thinking class when you haven't trained your own thinking is like trying to teach someone to play guitar when you haven't learned this instrument yourself. Someone might have *told* you how to play and given you some great blackline masters

to help your students. But if you haven't spent the time practising and training yourself, you really don't know what you are doing and it will be a miracle if your students learned to play guitar well from *your* teaching.

In the context of developing a thinking classroom, this means that you need to know what it is like to engage in deep and rigorous thinking so you can teach your students to do the same. Partly this comes down to practising what we preach. Our students learn as much from what we do as from what we say: if we aren't modelling good thinking, then the students won't learn it.

Teachers also have to know what it is like to *develop their own thinking* if they want to assist their students to do the same. There are many difficulties involved with developing your thinking. Unless you have been engaged with this task, you don't really know how to deal with the possible problems and how to help your students.

Many of the exercises in this book are designed for you to develop your own thinking, not for you to use with students. So, when you do these exercises I want you to take your teacher's hat off. Do the exercises for you, rather than thinking about how you might use them in your classroom. You don't get to develop your *own* thinking if your only concern is how you would use the exercises and theory for your students.

Creating a thinking classroom requires special teaching skills and processes

To get better at thinking and to be able to develop the thinking of others requires much more than knowing certain content. Creating a thinking classroom requires you use different skills and processes than you would if you had a different aim. Many of the exercises and activities in this book are designed to help you develop your skills in being a thinking coach or facilitator. They are like playing scales while learning a musical instrument. They may seem pointless, but conscientious practice will improve your skills.

Each exercise targets a particular aspect of good thinking or good coaching of thinking. Do all the exercises and do every part of each exercise. Don't change them because you think you have a better way of doing them. They are designed for a very specific purpose and aspects which you think are silly or trivial could in fact be very important. The more exercises you do and the more often you do them, the better you will become at creating a thinking classroom.

Development of thinking is partly about being able to 'see' things in different ways

To create a thinking classroom, the teacher not only has to learn new skills and processes, they also have to look and think about things in a different way. The teacher's attitudes, understandings, approaches and expectations are central to creating a thinking classroom.

If the teacher carries on with their normal approach and attitude to teaching and learning and throws in a few new exercises and activities, nothing will really change. You will get the same results and you will not get a thinking classroom. Creating a thinking classroom requires a fundamental shift in the teacher's perspective on teaching and learning. Many of the exercises and activities in this book are designed to transform the way you think or see things, not to pass on new content to you. The exercises are designed to allow you to see what is happening in your classroom in a different way and so to achieve different results with your students.

The development of thinking is about the development of good habits or thinking behaviours

Development of thinking is as much about developing certain behaviours as it is about transforming the way you see things. What is required is not more knowledge: knowing how to use thinking tools is not enough. You need to actually *do* certain things to bring about good thinking in your students. The exercises are designed to train you in certain behaviours which will make a difference in creating a thinking classroom. The only way to develop these behaviours is to practice, practice and practice some more. The more often you repeat an exercise, the more you will master the behaviours, the more ingrained the behaviours become and the more you are enabled to create a thinking classroom. Use the exercises regularly and even repeat them as often as you can until they become second nature. Many of the exercises in this book can be repeated with a different example to start with – for example, you can reflect on what is happening in a different class or do the group activity with a different question.

Structure of the book

A proportion of the book contains theory and background information to be read. This could be read by individual teachers before a professional development session or read as a group during the session. It could also be translated into a presentation to be given to a group of teachers as part of their professional development.

The book also contains practical exercises of different types. Reading the theory sections of the book is essential, but it is by doing the exercises that teachers will really get training in creating a thinking classroom.

The sequence of the sections and exercises in this book is designed to be of most practical use for teachers and schools. The exercises and theory later in the book presuppose you have done the exercises and understood the theory at the start. Earlier sections are designed to give teachers the tools, perspectives and practice so they can master later sections. Work through the book in the order presented for best effect.

You may find there are certain sections that deal with content that you are experienced with and certain sections that introduce content you know nothing about. Please do the exercises from all sections, even from the sections which you think you have already 'done'. It is important to keep practising even in areas where you have a high level of mastery.

Also, don't be disheartened if the exercises do not go the way you would hope. The book is designed to bring out anything that might get in the way of creating a thinking class. Having things sometimes not going the way you want is essential to the process.

The different exercises are designed to be used in different ways. For best use of these exercises, follow the specific instructions given for the type of exercise being used. After completing an exercise, share what you experienced, noticed or discovered at the next opportunity with the rest of the group. Listen to what the other teachers say about the same exercises and then turn this into a general discussion.



1. Thinking time

The theoretical sections are designed to be read *and* reflected upon. During the text there will be places for you to stop and think about what you are reading. This means you should stop reading and think about the questions for a *minimum* of 10 seconds. You could note down ideas as you think or do all the thinking in your own head. Take the time to do some thinking for yourself.



2. Transfer exercise

This type of exercise is for you to transfer what you have tried with other teachers into the context of your classroom. Use this sort of exercise at least once; using them several times with different classes would be more effective. When you share what happened, use the following structure, or something similar, to focus your comments. Stick to the point and explicitly answer each question before having a general discussion.

- What were you trying to do?
- What went well?
- What didn't go so well?
- What can you do to improve next time?



3. Reflection exercise

This type of exercise is for you to look closely at what happens in your classroom. It is a chance to get accurate details about what you or your students actually do rather than what you believe or assume happens. You can't develop the thinking of your students unless you have accurate views about what they are currently doing and what you are currently doing. These exercises should be done during and after a normal class you teach. Keep in mind what you are reflecting on during the class. Then, at the end, take a few minutes to note what you experienced.



4. Individual exercise

These are exercises for you to do on your own outside the classroom. Later you will get a chance to share ideas and work with others, but for these exercises it is important for you to work things through on your own and consolidate your learning and development.



5. Discussion exercise

Exercises for you to do with others. Do these exercises with a group of other teachers also participating in professional development in the thinking curriculum. A group of 6–15 people is ideal, but the number is flexible as long as it is sufficient enough to foster discussion. These exercises will not be effective if done on your own or in pairs and numbers fewer than five will not work well.



6. Pair exercise

Exercises to do in pairs. If you must have a group of three people, modify the instructions so that each of the three people has equal turns. Do not use more than three people for these exercises.



7. Drawing exercise

Exercises where you draw your understanding. Perhaps you would use a concept map or a cartoon or just some sort of symbolic diagram. If you are feeling energetic, you can replace a drawing activity with a body sculpture or drama, a piece of music or a story.

WHAT IS THINKING?



Most people don't have a clear picture of what thinking is. We tend to see it as something that goes on 'in our heads', hidden from everyone else. Used in this way the term 'thinking' is vague, ambiguous and mysterious. We ask our students to think about something, but they have no clue what that involves. This view of thinking makes it almost impossible to explain what thinking is or recognise it when it occurs. If you don't know what good thinking looks like or sounds like, you can't teach it or evaluate it.

Thinking behaviours

If we are trying to create a thinking classroom, we need to be able to answer the question 'What is thinking?' in a way that allows us to teach thinking to others and to evaluate if it is happening or not.

There are many possible ways to answer the question 'What is thinking?'. Many are based on research and theories about cognitive function or brain processes and are intended to give the essence or fundamental nature of thinking. However, many of the views about thinking are not very useful for *teaching* thinking. They may be accurate, but they leave 'thinking' as an inaccessible process in the brain. These views actually make it harder to explain to our students what thinking is and how to do it themselves.

This book puts forward one practical way of talking about thinking influenced by Costa's theory of habits of mind (Costa & Kallick 2000a). It is not intended to explain

the essential nature of thinking. This view of thinking is intended to be a clear and simple way for educators to describe good thinking, teach good thinking and help students be good thinkers and then evaluate their thinking. This view has been chosen because it is broad enough to cut across curricular and disciplinary boundaries and so can be useful in all subjects and disciplines, and even in our lives.



Think about people and students who you would call 'smart' or 'good thinkers'. What are some things that they do or say that makes you say this?

What is thinking? Thinking is a range of behaviours or things we do. The examples you thought of for the above Thinking time exercise are what I mean by thinking behaviours. In the end being a good thinker is about doing certain things. There are certain things a good thinker does that a poor thinker does not. For example a good thinker asks questions and double-checks what they have done.

Dimensions of thinking

Good thinking is about doing certain things. However, to behave in a thoughtful way also requires affective and cognitive dimensions. Good thinking is the result of these three dimensions:

Cognitive: what we think and know (skills, knowledge, beliefs).

Affective: what we feel and value (feelings, values, interest, dispositions).

Behavioural: what we do and say (behaviours, actions).

(Morgan & Saxton 1994, p. 5)

Cognitive dimension of thinking

The cognitive dimension of thinking is having tools or skills of thinking, or having the cognitive ability to deal with thinking tasks. In simpler terms it is knowing how to think.

However, if this is the only dimension of good thinking that we teach, we will be unable to have our students *be* good thinkers. Being a good thinker is more than having skills or tools for thinking well. Knowing how to do things has never guaranteed that people will actually do them. We all know how to get fit, be healthy, lose weight or save money, but this knowledge alone is not enough. Someone who knows how to ask good questions and double-check their calculations but who accepts everything without curiosity or query and who doesn't bother to verify their work is accurate is not a good thinker. What makes a good thinker is what they *do* with what they know.

Affective dimension

If the cognitive dimension on its own does not make good thinkers, what does? The answer is the affective dimension of thinking. To be good thinkers, we need to know how to think, but we also need to value thinking. We must see our thinking skills as useful and we must want to think well. This is partly provided by exposing the students to interesting and exciting content that requires good thinking. But the affective side to good thinking also involves personal engagement, curiosity and motivation. Cognitive skills without intellectual curiosity are useless.



What are the things that can happen in groups that stop you thinking or stop you sharing your thinking? What are the thoughts you have that stop you from thinking or sharing your thinking (for example, 'My idea isn't that good', 'This may be a stupid idea' ...)?

Reflection exercise

While teaching a standard class, reflect on the following questions. What are some things that happen in your classroom that mean it is not safe for your students to think or share their thoughts? What do you do that means it is unsafe for them to think? What do other students do that makes it unsafe for students to think?



Some foundation rules for a thinking classroom

Respect for others

For good thinking to happen, one fundamental condition is a climate of respect. An atmosphere of mutual respect acts as the fertile soil for good thinking to grow in. It is not enough on its own to produce good thinking; but without it, you will have barren crops. To create a climate of respect, something very similar to the following rules need to be in place.

- No hassles or put-downs. If someone makes fun of the thinking of another person, regardless of why they did it, it will no longer be a safe environment for thinking to occur. Students will be aware that the same thing might happen to them. So, making fun of the thinking of another person is NEVER appropriate.
- Listening carefully to what others think. This, at the basic level, means looking at a person while they speak and not speaking while they talk.
- Proper consideration of all ideas. To properly consider everyone's ideas, no idea can be pre-judged as being right or wrong. Instead we explore every idea until we really understand it before agreeing or disagreeing with it.
- Respectful challenging is essential. Showing proper respect to the thinking of others sometimes involves challenging their ideas. If there are problematic aspects of their ideas it would not be respectful to say 'nice idea' and to ignore the problems. If you challenge the idea and look at the flaws in it with an eye to improving it, it shows proper respect for an idea, and that you are treating it seriously.
- Building on ideas. Showing proper respect to the thinking of others also involves building on what others say and think. Doing this means you have to put your own ideas to one side. You show respect for their ideas when you take them and see where they lead.

These rules need to be built into any class that values and supports good thinking. They are the ground rules for the exercises in this book. Any time you do an exercise with other teachers or students, these are the basic conditions you need to create and respect.