Creating a thinking school

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Abstract
Clinton Golding, a practitioner with many years’ experience in leading a thinking curriculum in schools, describes the conditions necessary for a thinking curriculum to become a reality in a school. He argues for authentic learning and assessment, explicit reference to the thinking curriculum at all levels, and involvement of the whole school community. He has included a Thinking School’s Checklist.

Creating a thinking school
We don’t just want our students to be better thinkers so they will have skills needed in tomorrow’s world. The point of a thinking school is to develop students who are well-rounded, responsible persons. We want our students to gain the skills they will need for the future, that is, to be critical, creative, collaborative and caring thinkers, because this will make them better citizens. Focus on the students’ skills is one aspect of the current trend in the development of thinking in education. Equally important is the establishment of an environment, background conditions, and a culture necessary to encourage students to develop their thinking.

What is meant by developing thinking skills?
Developing student thinking cultivates independent and responsible thinkers. It means developing thinking skills and habits to make a positive difference in learning and living. ‘Thinking’ students are skilled at making good decisions, are creative and critical, and can analyse, evaluate and apply what they know. They can also monitor their own thinking processes in order to modify or improve them when necessary. Thinking students are also aware of the ethical implications of their ideas and actions and can learn to make good decisions. Art Costa calls a school that is developing the thinking dispositions of its students in the way described above as a ‘thinking school’.
In the future, students may change careers many times and will be bombarded with huge amounts of dubious information and unexamined values. They need to develop their thinking so they have the skills to deal with a world of uncertainty and complexity.

**Cultural change necessary for the successful development of thinking in a school**

For a thinking program in a school to be truly effective, the culture within some schools will need to change. It must be dedicated to the goal of being a thinking school.

The culture of a school is evident in what it states, values and achieves. It is also evident in what is expected of students. Today, many schools are committed to finding ways to develop the thinking of their students. Focusing on developing knowledge, passing tests, and getting through curriculum requirements are no longer seen as sufficient.

Unfortunately, many schools only get as far as teaching thinking skills. Achieving the cultural change required to consolidate the critical thinking of students involves more than just learning some new skills. It requires changing viewpoints, goals and habits in a school community.

Knowing how to do something makes very little difference on its own. (How many of us know how to lose weight?) It is not enough that staff or students know how to use certain thinking tools or skills. The culture of the school must be such that students and staff use the tools and skills as often as possible and apply their decision-making and problem-solving skills to all areas of their lives.

The kind of cultural change that is necessary to create a thinking school demands that teachers and students change their educational goals. The school has to promote education as a means of developing habits of thinking rather than merely being a way of learning information in order to pass tests and get a job. Curriculum areas should be considered as a means of encouraging and developing different thinking processes and abilities around subject matter. Teachers need to work as professional learning teams on the common goal of developing the thinking of students rather than as promoting their own discipline. At first this might be difficult for secondary teachers used to distinct subject domains.

**Conventional versus thinking schools’ views of education**

The table on the following page contains a summary of the sort of cultural change that is required. In creating a thinking school, we are moving from the conventional view of education, which is not consistent with a thinking school, to an alternative ‘thinking school’ view of teachers, students and education.
Cultural change
Changing a culture means reorganising the fundamental ways an organisation operates. It is a major undertaking to develop a school to the point where it focuses on producing independent and responsible thinkers, and where it attains this goal. Studies of organisations attempting such major undertakings indicate the process takes between three and five years before significant results occur.

How does such a major culture change come about? How can a school change the fundamental ways in which it operates so that the thinking of students can be significantly developed? Changes in the whole school environment, the school community and in particular in the nature of education and the role of the teacher are needed. Normally the principal and senior management team instigate such broad changes, but individual teachers, with senior management support, are sometimes behind the drive for change.

<table>
<thead>
<tr>
<th>Conventional view of education, teachers and students</th>
<th>Thinking schools' view of teachers and students</th>
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<tbody>
<tr>
<td>The focus of education is on passing on information, correct answers, facts and data to students.</td>
<td>The focus of education is on developing thoughtful students.</td>
</tr>
<tr>
<td>Education is to ensure students know everything they need.</td>
<td>Education is to engage students and get them to change and grow.</td>
</tr>
<tr>
<td>The units of education are knowledge already gained, information, correct answers, facts and data.</td>
<td>The units of education are suggestions, inferences, suppositions, tentative explanations and ideas.</td>
</tr>
<tr>
<td>The aim is to have students cover certain content and reach a certain level of knowledge.</td>
<td>The aim is to have students develop thinking skills and behaviours.</td>
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<tr>
<td>The teacher’s main role is to be the source of knowledge and information. They must ensure students have covered the content.</td>
<td>The teacher’s main role is to be a facilitator and coach of students—to help them to develop thinking skills and behaviours.</td>
</tr>
<tr>
<td>The teacher’s task is to evaluate whether the students have got the right or wrong answers.</td>
<td>The teacher’s task is to help students learn how to inquire and evaluate for themselves.</td>
</tr>
<tr>
<td>The curriculum gives content to cover.</td>
<td>The curriculum gives processes and skills.</td>
</tr>
<tr>
<td>The teacher’s role is to make sure students have covered the curriculum content and can pass the assessment tasks.</td>
<td>The teacher’s role is to help students to develop the skills and processes from the curriculum.</td>
</tr>
<tr>
<td>The teacher assesses retention of the student’s knowledge and answers.</td>
<td>The teacher assesses whether students have mastered the thinking processes and skills.</td>
</tr>
<tr>
<td>The student’s task is to learn the knowledge so they can pass exams and assessments.</td>
<td>The student’s task is to think, inquire, learn, discuss ideas and figure out the best answers to problems.</td>
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A supportive culture for a thinking school
What can the principal and curriculum leaders do to develop and improve the thinking within their school? There are eight main areas that need to be addressed to ensure the school culture supports the goal of being a thinking school.

a. Ensure the development of thinking is an explicit aim of the school.

b. Model and personally promote the development of thinking.

c. Create a school environment that promotes the development of thinking.

d. Ensure time is explicitly set aside for the development of thinking.

e. Encourage teachers to consider themselves as facilitators of thinking.

f. Ensure that students consider themselves learners and thinkers.

g. Provide time, resources and training to support teachers in developing thinking students.

h. Inform the wider school community and involve them in creating a thinking curriculum.

Each of these areas will be examined below in terms of what needs to be done, why doing this is important, and questions that can be asked to help develop the scaffolding required to turn schools into thinking environments.

A. Ensure the development of thinking is an explicit aim of the school
If a school is to develop the thinking of its students then it needs to be explicitly stated in its charter and curriculum statements. If a school is not overtly focused on the development of thinking, teachers and students will not see this as their purpose at school.

Ways to ensure the development of thinking becomes a school goal include:

• departmental reporting based around the development of thinking,

• writing the development of thinking into a school motto, for example, ‘Longview School values thinking’,

• writing the development of thinking into the school charter, mission statement, values or goals, and

• creating action plans to achieve the thinking school’s goals.
B. Model and personally promote the development of thinking
As well as having the development of thinking written as an explicit aim of the school, the senior management needs to model good thinking and personally promote this aim. If a principal wants creative, flexible and accurate thinkers, then she or he must model flexible, creative and accurate thinking. If questioners and analysers are desired, then she or he must ask students to analyse and ask questions and indicate that these are worthwhile things to do.

If staff and students see and hear the senior management acting in accord with the stated aim of developing thinking, then they will be more likely to follow suit. There are a number of ways the senior management can model and promote the development of thinking in a school. They should:

- talk to staff individually about their vision and aims,
- hold staff meetings on the topic of developing thinking,
- show that they take some time to thoughtfully consider comments and questions,
- share the questions they are still trying to answer,
- carefully listen to what staff and students have to say,
- demonstrate that they value good thinking,
- make thinking and the development of thinking a topic they often talk about,
- share areas in which they have developed their thinking,
- describe their thinking and how they managed to ‘figure things out’,
- ask for students to do some thinking. Ask them questions such as, What do you think about this? and How could we improve that?, and
- praise or reward instances of good thinking processes.

C. Create a school environment that promotes the development of thinking
Every aspect of the school environment should promote the development of thinking and there can be no inconsistencies. For example, academic awards should include prizes for good thinking and the rules of the school should call for thoughtful behaviour.
There is no point saying thinking is valuable while the environment of the school actually represses opportunities. For example, if we teach that listening to others is good thinking behaviour but we don’t listen to students’ ideas or their explanations for their behaviour, then they won’t be interested in developing good listening habits as part of their thinking development. If we say that development of independent thinking is important, but we don’t allow students opportunities to discuss and talk about the school rules or their treatment at school, then we won’t develop their thinking. If we say questioning is good, but we never make time for students to question what they are doing and why they are doing it, then they will not value questioning. Students react to mixed messages and will ignore the advocacy of thinking skills when the school environment does not match what we say is important.

In order to establish an environment that promotes good thinking, there needs to be a thorough investigation of the school’s systems, structures and environment. The following could also be examined:

- **reporting**—are there specific comments on the development of students’ thinking abilities on report cards?

- **physical environments**—classroom and general—are classrooms arranged in a way that invites student to student interaction, discussion and thinking?

- **auditing subjects**—are they audited for the thinking skills being promoted?

- **extra-curricular activities** such as sport and extension work—are these being audited for the thinking skills being promoted?

- **staff hiring policies**—are these based on candidates being willing and able to develop the thinking of students?

- **departments systematically involved**—are all departments promoting certain thinking abilities and habits?

**D. Ensure time is explicitly set aside for the development of thinking**

The most obvious way to have the environment of a school promote the development of thinking is by setting aside time to be used for this purpose. What is really valued by a school can be established by looking at what has been assigned time-slots in any given busy week. Whether a school values maths, science, art, writing, sport, music or grammar becomes obvious. Staff should be released from other tasks so they will have time to devote to the development of thinking in their classes. This is not the same as having some thinking
development happen as a side effect of, say, doing English. There also needs to be a time set aside explicitly to establish ways of developing thinking skills.

Without time being used solely for the development of thinking, students will not examine their thinking and teachers will see all the other things they have to get through as more important than developing the thinking of their students. In either case, the students’ thinking skills will not be developed.

There are a number of ways to devote time specifically to the goal of developing thinking.

• There could be a designated thinking class that focuses only on developing thinking.

• Time could be used in the different subjects for the development of thinking—perhaps different subject areas could teach different thinking skills or behaviours.

• Explicit thinking components can be built into unit plans.

• Special times throughout the school program could be used for thinking activities.

E. Encourage teachers to consider themselves as facilitators of thinking

Staff should view their role as thinking facilitators to be at least as important as any other role they have as teachers. In fact, for best results, they should see the development of thinking as their prime goal and everything else, for example, transfer of knowledge, as the means of reaching this goal.

Even if they can’t articulate it, teachers will be operating implicitly according to a particular view of what education is and their role in the education process. The traditional culture of schools makes it difficult for teachers to see themselves as thinking facilitators. For teachers to become coaches or facilitators of thinking, they must move from the view that their role is to be the source and evaluator of knowledge. Their role is to encourage and promote students’ thinking so they can do this themselves, rather than doing it for them.

In order to take on the role of a thinking coach, teachers need to:

i. Make the development of thinking an explicit aim of a classroom

Both as a reminder for yourself and for the students, there needs to be an explicit statement that your classroom is designed to develop the thinking of students. This needs to be discussed with students regularly. The students must know that the purpose of the class is to develop their thinking.
ii. Model and personally promote the development of thinking

Teachers should practise and model the same skills they want the students to develop.

They need to ask questions and answer questions asked of them. They can admit that sometimes they make mistakes, that they need time to think well, that it is OK to take risks in thinking, and that there is nothing wrong with sometimes giving an incorrect answer. They can also make their thinking obvious to the students. This can be done by thinking aloud or by explaining the thinking process that led them to certain decisions and actions.

To personally promote thinking, teachers must shift their focus from promoting correct answers to promoting thinking behaviours and skills. The teacher should avoid judging the students’ ideas as correct or incorrect. Sometimes making no judgment allows more independent thinking from students, and it trains the students to evaluate their own and each other’s ideas. Instead, teachers can acknowledge any important points or new ideas, interesting angles or variations offered by a student. Praise should be directed at how well students have performed thinking processes and how well their opinions show they have performed it, rather than at their conclusions.

iii. Have the environment of the classroom promote the development of thinking

The environment of the classroom needs to promote the development of thinking. In particular, the teacher should seek to create an environment where students are called upon to think broadly and deeply and where they feel safe and comfortable enough to want to take risks in thinking. For example:

- tests, assessments and activities that emphasise and grade the thinking process rather than just the product should be used, and

- the resources and training that lead students to value and have opportunities to practise their thinking should be provided.

As part of creating an environment for thinking, teachers need to attend to the physical space of the classroom. Having the standard classroom arrangement of students all facing the teacher at the front does not promote thinking, but keeps students in the mode of information absorbers. Some suggested ways to arrange a classroom are:

- flexible arrangements where the teacher is not always dominant at the front of the room, and

- seating placed in a circle or semicircle so everyone can see and interact with everyone else—this encourages teacher–student and student–student interaction and questioning.
d. Have class time set aside for development of thinking

As a coach of thinking, teachers need to provide the time for students to think and develop their thinking. First, teachers might have a time set aside for thinking in the same way that they might have a specific time in the day set aside for maths, science or silent reading. There may be a thinking subject or time within other subject areas for developing the thinking associated with it—for example, problem solving in maths. Second, teachers need to give students the time to think well during all their classroom activities. A ‘wait’ time or thinking time after asking questions and after an answer is suggested. This will enable students to think about what has been said. To provide time for this thinking, teachers should not artificially stop the process by providing conclusive answers or moving on too quickly. This requires teachers to listen actively to their students and promote risk-taking and playing with ideas. They must accept multiple answers and encourage inventiveness.

Some specific examples of ways of increasing the thinking time of students are:

- never accept immediate answers to questions—always wait a few seconds that is explicitly termed ‘thinking time’,

- model sample responses so students have an expectation of what to do,

- have students write responses or share with a partner before giving the idea to the whole class,

- find other means of ensuring there are responses from all class members (for example distributing five beads to each member of a discussion group, each one representing permission to speak), and

- accept all responses, but ask the students to evaluate them.

F. Ensure that students consider themselves learners and thinkers

Although they will meet with student resistance borne of years of being able to escape having to think for themselves, teachers need to help their students realise that they are in class to develop their thinking. For best results, students, like teachers, need to see that everything they do at school serves their primary goal of becoming better thinkers and learners.

One way to do this is to be very clear and explicit about what thinking is required from students. Teachers need to use thinking terminology to be as clear as possible in asking students to improve their thinking. They should avoid just saying ‘think about that’, but be specific about the thinking operations required, for example:
• Analyse the differences between …

• Come up with reasons for and against …

• Imagine other possibilities …

Label, classify, and categorise as well as praise any good thinking behaviour that occurs.

If students don’t see themselves primarily as thinkers and learners, then the various constraints and pressures of traditional school life will always override the goal of developing their thinking. There will always be something that is more important to do. If the teachers see themselves as thinking coaches, but the students see their job as passing tests or learning facts to get a job, then the teachers will not be successful coaches. The students will not see the point of the activities and lessons their teachers provide if they cannot see their benefits.

Like teachers, students have their own ideas about their role at school. Even if they can’t articulate this role, they too will be operating according to a particular view of education. However, because of the traditional culture of schools, the role that students see for themselves is unlikely to be as thinkers or learners. To change the culture of what it is to be a student, we will need to give clear explanations and expectations to show that what we want from students is not the same as the traditional idea of schooling. Students are being asked to participate in a different style of education. Unless they know exactly what is expected and know how to match the teacher’s expectations, they will continue as they have always done and they will not develop new thinking habits.

Some ways to develop the role of students as thinkers and learners include:

• emphasising thinking and learning, for example, celebrating success in verbal and physical presentations in workshops, at assemblies and in classroom interaction,

• making good thinking and learning (creative, critical, analytical, strategic) an integral part of their daily activities,

• focusing on thinking and learning processes rather than final answers, and

• adopting issues, topics and subjects of study that the students select and they want to learn about.
G. Provide time, resources and training to support teachers in developing thinking students

Without support and professional development training, teachers will know what they want to do, but will not be able to do it properly. They need time to practise the methods, activities and styles of teaching that develop and promote the thinking of students.

This can be achieved by:

• providing professional development courses on improving thinking skills for teachers,

• buying support materials such as books, articles, and teaching plans,

• organising thinking experts to work with the whole staff,

• training a few staff who then train other staff,

• having one or more people on staff who work as the thinking development team,

• allotting time for staff to reflect on what they are doing and to get better at developing the thinking of their students, and

• finding time for teachers to share student successes, commenting on particularly good ways of thinking about something, for example, establishing reflection groups across departments.

H. Inform the wider school community and involve them in creating a thinking curriculum

The wider school community needs to be involved as students don’t just think and learn in school. The community in which the school operates should be involved in the process of developing a thinking school. Students require opportunities to use their new thinking habits in the ‘outside’ world and to see that this is valuable. They must have opportunities to transfer what they are learning to their lives outside school. The development of thinking within a school will be much more effective if

• parents and community are actively engaged in developing the thinking of their children,

• local professional, trade and business people come to school and talk about the thinking involved in their work,
• students see the thinking that occurs behind community decisions, and

• students think about community issues.

The wider school community could be involved in developing student’s thinking by:

• having the students thinking with members of the wider school community—
  for example, discussions with the board or parents,

• having students think about community issues,

• training parents and board members in thinking alongside the students,

• having students visit the wider community (zoos, businesses, museums, galleries) to experience what thinking skills they find there, and

• inviting members of the community to share their processes of thinking, for example, a builder explains how he or she solves construction problems, similarly invite a tailor, caretaker and so on.
A Thinking School’s Checklist

1 What is the stated purpose of your school?
   How could you make the development of thinking part of the stated purpose of your school?

2 Do senior personnel model or promote thinking?
   How could they model, promote or open up good thinking from staff or students?

3 Think about the different aspects of your school environment:
   Which aspects promote the thinking of students? Which aspects do not promote thinking, but restrict thinking or steal the opportunity for students to think for themselves?

4 How much time is explicitly devoted to developing thinking?
   How could you free up and assign some time during the week when developing thinking would be the explicit aim?

5 What do teachers at your school see as their primary role?
   How could teachers at your school be encouraged to see themselves as thinking coaches and facilitators?

6 What do students at your school see as their primary role?
   How can students at your school be encouraged to see that their primary role is to be learners and thinkers?

7 What support do teachers currently have for developing thinking?
   What support could be offered to your teachers so they are more effective at developing the thinking of students in your school?

8 To what extent is the wider community involved in the development of thinking at your school?
   How can the wider school community be involved in the development of students’ thinking?

Bibliography