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Criteria

Editors' Introduction

In the last two chapters, Lisa Dellamora and Kim Williams offered a challenging "ripple effects" view of future schooling if we continue to pursue a vision of learning based primarily on the teaching and testing of knowledge in the isolated silos we call content areas while disregarding what we now know about 21st-century learning needs and neuroscience research. Many of the innovations that surface to shift from this antiquated view seem as isolated: bring in a "new" program, more supervision and evaluation of teachers, reduced class size and/or school size, promote technology use by student, privatize schools for more competition and innovation, apply isolated "brain-based" research to practice, focus on "best practices" by teachers, develop consistent curriculum and units of study based on new standards or the "common core," and engage teachers as leaders. Schools and systems have attempted to do some or all these things and often with some success. But these trials, errors, and successes are often measured against the existing paradigm of 20th-century learning rather than projecting forward into the rapidly changing landscape of global education in the cognitive age. If the focus of the whole school still remains fundamentally imbalanced toward "content learning," then we have improved on that which is antiquated rather than transforming schools toward a new paradigm.

What is the alternative? Professor Emeritus Bob Burden of Exeter University in the United Kingdom has been investigating this question for most of his career. As one of the world leaders in the field of dyslexia, he paralleled this primary research area with close attention to the evolving field of cognitive-based teaching, learning, and assessment. Bob's extensive international work has informed his respect for the cultural contexts that frame individual growth, classroom practice, and whole school change. Bob's deep understanding of the practice and theory of a range of dimensions of thinking and practical classroom approaches to thinking give us the grounding for comprehensive definition of and criteria for Thinking Schools. Few have the experience to attempt, to even risk defining that which seems so diffuse. Bob offers an explicit answer to the question: What constitutes a Thinking School? The 14 criteria that Bob has developed for use by any school around the world is used as a reflective framework—not a template or checklist—for schools that want to map out their own vision. Schools may also engage in the collaborative process of becoming accredited as a Thinking School. Does this sound odd? Not really, because Bob also conveys that the process of accreditation is a journey that proceeds forward with continuous development, and not an end point.

CRITERIA FOR THINKING SCHOOLS APPROACH

Bob Burden

INTRODUCTION ◼

By far the most rewarding aspect of developing a 'Thinking School Culture' has been the impact on our pupils' attitudes towards learning, on their motivation and their growing sense of themselves as learners. We are constantly amazed by their sharing of their thinking and (teachers) no longer make assumptions about pupils' capacities to learn. Pupils have become increasingly more involved in their learning with teachers becoming more confident in relinquishing their control, giving greater choices to our pupils.

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, Head Teacher/Principal Cardiff, p. 2.

The first decade of the 21st century has witnessed the beginnings of a mini-revolution in curriculum planning and pedagogy in schools across the globe. Wearied by the constricting demands of overprescriptive national curriculums and the invidious requirements of continuous government-set examinations, many within the teaching profession in the United Kingdom and other countries have become conscious of the transformational nature of cognitive approaches to learning as an alternative to transmission-based teaching. The ideas of such luminaries as Matthew Lipman (Philosophy for Children), Edward de Bono (Lateral Thinking), and Reuven Feuerstein (Instrumental Enrichment), previously considered to be "on the fringe" of educational thinking, have increasingly come to be seen as offering valuable insights into the fundamental connection between thinking and learning.

Similarly, in the United States the revolutionary ideas of the Harvard Project Zero team, stimulated by the leadership of David Perkins and Howard Gardner (Multiple Intelligences), alongside the inspirational writings of Art Costa (Habits of Mind) and Robert Sternberg (Triarchic Mind), and others of a similar mindset, have filtered through to many educational establishments while making a wider global impact on such curriculum innovations as the *International Baccalaureate.* On the whole, however, the global impact of all these luminaries might best be described as somewhat piecemeal and, as yet, rather muted.

Attempts to introduce thinking skills into schools are certainly not new. As far back as the mid-1980s, reports emphasized the need for schools to produce more independent thinkers and problem solvers, a demand repeated in more recent years from around the world.

In the United States, there was a "thinking skills" movement in the late 1970s and into the early 1990s cresting on the wave of Piagetian "constructivism" and

well-documented in the comprehensive book, *Developing Minds* (Costa, 2001). This edited book contained dozens of educational leaders, university professors, and practitioners describing their theories, research, and practice of the explicit development of students' thinking abilities. A U.K. Government sponsored inquiry carried out by Carol McGuiness (1999) toward the end of the century came to very similar conclusions and suggested the integration of thinking skills into the mainstream curriculum as one possible way forward.

Meanwhile, however, research into the effectiveness of such approaches appeared to produce, at best, equivocal results. The "thinking skills" wave crashed. A typical scenario was of initial enthusiasm by "converted" teachers withering on the vine of others' indifference, or even downright hostility. This was not helped by lack of "hard" evidence showing formally acceptable learning outcomes or long-term uptake of cognitive approaches other than as supporting high quality teaching and learning, but not a central driver for transforming schools. Each of these approaches and many others have become to a certain degree embedded in the everyday practices of classroom teachers today. So, in one sense, the impact of the rise in the research and practice of thinking process approaches has been wide, though maybe not so deep. There is now a higher awareness of multiple intelligences, including emotional intelligence and cooperative learning; the need to focus on dispositions for thinking, or habits of mind; and the use of a range of graphic representations that support different learning modalities through visual tools such as Concept Mapping and Thinking Maps. The use of Bloom's Taxonomy of Cognitive Objectives as a framework for designing curriculum and asking students questions that go well beyond simply factual responses has been central to this work, as teaches attempt to engage students in the processes of analysis, synthesis, evaluation, and reflection through a metacognitive perspective.

SO WHAT, THEN, IS A "THINKING" LEARNER?

Given this brief historical background it becomes essential to answer a fundamental question: What is a "Thinking" Learner? First, let us dismiss a possible answer: that a thinking learner is just *any* learner, since, by definition, a learner has to be thinking. Actually, learning and thinking are complex activities, and their definitions are not so clear-cut. Perhaps more learning is done unconsciously than we realize. But this chapter is not the place for a comprehensive, complex analysis. The point is that some learning is clearly more *thoughtful* than other types of learning. Compare, for example, classic "rote" learning of tables, e.g., multiplication or elemental, with scaffolded learning of the principles behind such tables. There may indeed be degrees of "thoughtfulness," but it is an aspiration to operate at the *higher* end of such a continuum that underpins the notions of the Thinking School and the Thinking Learner.

One aspect, then, of the development of the Thinking Learner within a Thinking School could well be a sharing in the wide recognition of differences between lower order thinking and higher order thinking. The main categories of Lorin Anderson's et al. 2001 revision of the Bloom's Taxonomy of Cognitive

Objectives (remembering, understanding, applying, analyzing, evaluating, and creating) might become commonly used, if not displayed, in classrooms. Many approaches to the development of a Thinking Learner often begins with an investigation of Bloom's Taxonomy, though few remember that these are *cognitive* objectives.

But it is important to emphasize that such schemes and terms should be used *meaningfully,* with a view to *learners* becoming more aware of the level of task they are being asked to perform by teachers. Younger children, for example, might be put off by words such as "apply" or "analyze" but could be encouraged deliberately to extend their thinking by questions such as, "Does anything we have learned in this lesson make a *difference* to how we live or think?" or "What were the main things we learned in this lesson, and how do they *connect?*" The goal, ultimately, is not simply for learners to address the individual tasks successfully or even thoughtfully. It is for them develop a cognitive stance when faced with any new learning experience within and beyond the formal structure of school.

One example, the language of Thinking Maps, which has been used extensively with other visual tools by schools focused on student-centered development of thinking, can be particularly helpful in developing such student awareness. As visual representations of eight fundamental cognitive processes activated by graphic patterns that expand on the page as the student develops connected information, each Thinking Map explicitly names and defines fundamental cognitive process and how they are used together for reading, writing, and thinking across all disciplines. For example, seeing analogies (using the bridge map) is naturally creative, and particularly seeks the application of an idea in different contexts; relating parts to wholes (the brace map) clearly involves analysis; describing specific attributes or qualities of things (the bubble map) and comparing and contrasting using these characteristics as a filter or rubric (the double-bubble map) also involves analysis, and, with guidance, leads to evaluation. The addition of the visual "frame of reference" that is used around each map offers students a concrete tool and a visual, metacognitive space for identifying and exploring what is influencing their perceptions and seeking to understand ideas from multiple points of view held by other classmates or by material presented in the texts or on the web.

It might also be noted that Benjamin Bloom was interested in objectives in the affective domain (emotional awareness and development) as well as the cognitive, again listing them from lower order ("receiving" or just attending) through "valuing" (showing interest or appreciation) to "characterizing" (taking on a particular value or belief as part of their character). A Thinking School takes this domain just as seriously, aiming to develop their pupils' *"interest in their work, positive attitudes towards school, enjoyment and confidence in learning"* (11th of 14 criteria described below). One could even say that among the values and beliefs that characterize thinking learners would be those that make up what Carol Dweck calls a *growth mindset* (Dweck, 2006). This may be seen as a series of values, stemming from the prime belief that *intelligence can be developed,* much as the brain has a high degree of plasticity. Cognitive challenges, then, are welcomed as means to this end; effort and persistence are valued in

Capitalize the names of the Thinking Maps

meeting such challenges; and mistakes and criticism are viewed positively, as opportunities for learning.

Other ways of developing the affective alongside the cognitive would be to focus on Costa's 16 Habits of Mind (which include adventurousness, persistence, and openness). We have found that Art Costa's Habits of Mind model has been used by many schools focusing on thinking because it engages learners and teachers alike in a new vocabulary for dispositions that directly affect how they approach problems, how they collaborate, and how they respond to new information and problems for which understanding is not immediately apparent. These dispositions are essential for living in a complex, highly networked global communication system, wherein people from different countries, cultures, and languages are working in teams via texting, Facebook, and Skype. A recent book *The Power of the Social Brain: Teaching, Learning and Interdependent Thinking* (Costa & O'leary, 2013) on just one of the Habits of Mind, *interdependence,* is a comprehensive investigation of how students can elevate their thinking capacities when explicitly focused on dispositions such as the development of patience, persistence, clarity of communication, and empathy. Guy Claxton's 8 Character Strengths and Virtues for the Learning Age (which include imagination, courage, and experimentation) is another model that gets to this intersection of cognitive processes and affective dispositions uniting to support a thinking learner. Another framework is afforded by the P4C model (Philosophy for Children)—Critical and Creative, Caring and Collaborative Thinking—which can be practiced in dedicated "communities of enquiry" and which ripple outward into learning across the curriculum. Such lists of thinking virtues can seem a little daunting but schools that are, or aspire to be, Thinking Schools, will already have signed up to them in principle. They will have begun to *explicitly* discuss these dispositions and consciously use them as reflective signposts for developing high quality thinking and improving interdependent, collaborative thinking of all students within the community.

The value placed on the ability of learners to demonstrate critical and creative, caring and cooperative (collaborative) thinking is clear. But perhaps a final emphasis should be placed on the practice of *reflective* thinking. This is a vital quality of the thinking learner, clearly distinguishing her from the "rote," or the passive, learner. A reflective thinker/learner is one who is independently and actively reflecting on both the process and the content of her learning. This may begin with identification of her preferred learning styles or modalities, but would work toward deepening awareness of self, especially her dispositions, and of her relationships with others in her learning community.

Schools could encourage such deepening in various ways. They might, for example, take it to be an essential component of a good Personal and Social Education/Development program with a spotlight being shone on "self-awareness."

Or some schools might prefer to broach these ideas in even greater depth within a dedicated "thinking" or "study skills" program. The ideal offered here is that reflection (or review, as distinct from revision) would take a more routine place in all lessons, with every teacher using "Wait Time" (or "think, pair, share"), to consolidate the content of learning and occasionally to reflect on the

process of learning. By such means learners increasingly see themselves as creative agents in their own learning.

That, in short, is the ideal of the thinking learner: one who has realized that "learning" is for herself (not *for* her parents or her teachers—and still less *by* them!); but, moreover, that it is an active process, involving persistent collaboration with her teachers and with others, to construct better understandings; and, finally, that her own understanding will grow precisely in line with the fundamental dispositions to enquire, to share, and to reflect.

THE ROLE OF EXETER'S COGNITIVE ◼ EDUCATION CENTRE FOR THINKING SCHOOLS

The Exeter University Cognitive Education Centre was established in 2005 with a number of aims in mind. Its location in one of the most prestigious teacher education departments in the United Kingdom made it ideally placed to introduce thinking skills into the curriculum of prospective teachers. At the same time, there was a desire to make available to schools across the United Kingdom the latest information about cognitive program developments and research findings, and to act as a hub through which interested schools could contact each other and share ideas and experiences. Finally, there was the expressed intention to seek ways of assessing the impact of thinking approaches on a wide range of learning and behavioral outcomes with a view to helping schools maximize their effectiveness. This latter aim led us to begin our search by seeking to identify how and why attempts to introduce thinking skills into the curriculum had so much promise, and only a minimal impact.

Our preliminary analysis of why so many thinking skills initiatives either petered out or simply failed altogether led us to conclude that the problem did not necessarily lie within the program, model, theory, or approach to implementation themselves. Feuerstein's theory of *Structural Cognitive Modifiability* is one of the most impressively constructed theoretical frameworks for cognitive change that has ever been produced with 50 years of remarkable research. The foundations of Lipman's *Philosophy for Children* and Communities of Enquiry stretch back to Dewey and to Socrates. There is plenty of anecdotal evidence that the creative tools and techniques within De Bono's *Lateral Thinking* approach and *Six Hat Thinking* has been shown to bring about remarkable improvements in business organizations and schools worldwide. Art Costa and Guy Claxton have demonstrated the efficacy of focusing on dispositions. The effectiveness of the cognitive process model of Thinking Maps developed by David Hyerle has been demonstrated through extensive documentation and research across whole schools. If each of these approaches has been effective, then where did the roots of the problem lie?

The conclusion that we reached was that the obstacles to the successful implementation of any thinking "program" designed to teach children to 'learn how to learn' were almost entirely systemic. There was little wrong with many of the approaches themselves, but rather the ways in which they have been introduced into schools. Firstly, there was what Georgiades and Phillimore

(1975) referred to many years ago as *The Myth of the Hero Innovator.* In a highly influential article, they pointed out that innovations are often introduced by enthusiastic individuals, possibly teachers returning from a conference or course, who seek to impose their newfound enthusiasm on an unresponsive audience of skeptical colleagues. In a telling phrase, these authors commented that "organizations, like dragons, eat hero-innovators for breakfast" (Georgiades & Phillimore, 1975). Thus, deprived of support or nourishment, and experiencing even downright hostility from other colleagues, the innovation will inevitably fail. This was clearly exemplified in Blagg's (1989) study and a more recent case study evaluation by Burden and Nichols (2000) of one school's attempt to introduce thinking skills into the curriculum. In the latter study, we were able to identify by means of an illuminative evaluation some key factors preventing the successful uptake of the thinking skills approach. Here it became apparent that forceful leadership that had not won over the hearts and minds of the teaching personnel, particularly in a large secondary school, was almost certain to fail. If key stakeholders have a different set of priorities and different views about the nature of the teaching/learning process, then the students are likely to become confused at what they see as mixed messages. Moreover, unless those attempting to teach thinking skills and strategies are themselves completely committed and demonstrating a high level of expertise, the students are unlikely to be convinced.

Secondly, within the United Kingdom and in the United States as well, the ever increasing demands on teachers to meet various externally imposed targets (the ever increasing focus on standardized test results) left little time or opportunity for creative curriculum planning, or for further reflection and innovation. It was only when frustrated with a National Curriculum that gave the impression, at least, of focusing mainly on the regurgitation of information by means of formalized assessment tasks that teachers began to cast their eyes widely for more process-based approaches to teaching and learning. However, although cognitive (or, as they are more commonly known, *thinking skills*) approaches appeared to many to offer more promising alternatives, advocates of some isolated thinking skills programs often fell into the trap of appearing to claim that they could provide the answer to all traditional schooling's ills. While most approaches, models, and/or fully developed programs offered something special to the cognitive curriculum, what was often not realized was finding ways for them to complement each other rather than being mutually exclusive. This understanding was central to our work of promoting systemic change.

The need, therefore, was to seek ways of combining the benefits of a range of high quality programs rather than focus on just one. As one head teacher reported in his review of the Thinking Schools approach,

> The key to whole school success is a whole school approach to thinking skills. They need to be taught both discretely and immersed into subject delivery; this can only be achieved by a comprehensive in-service program that includes the sharing of good practice across the school through workshops. (Thinking Schools International, n.d., p. 3)

By taking a piecemeal approach to teaching thinking and "study skills," the danger became one of adding the occasional stimulating lesson devoted to thinking skills as a kind of add on, bolt on, "sticking plaster" solution, while at the same time conveying a set of mixed messages to the students. This would be analogous to the long-practiced ritual by teachers of offering "brain teasers" as the end-of-the-day activity rather than explicitly and fundamentally shifting and refining the focus of teaching and learning toward the development of thinking. Before long, those who had begun so enthusiastically trying out new "techniques" or programs were in danger of finding themselves asking, in the words of the immortal Peggy Lee, "Is that all there is?"

The breakthrough came from an unexpected direction. The literature on school effectiveness and school improvement, since the early work of Michael Rutter and Peter Mortimore and his colleagues at the Institute of Education in the United Kingdom, later summarized by Teddlie and Reynolds (2000) and built on by Michael Fullan (1982) and others had more or less come to similar conclusions on how to recognize an effective school and what needed to be done to achieve a school's vision. In their excellent summary of what is known about effective schools, Reid, Hopkins, and Holly (1987) identified a number of key factors. Strong leadership that is curriculum-focused is vital. The school has to be well organized with a happy, efficient staff, who all should have a common purpose and a guiding value system and ideally be involved in collaborative planning and implementation. Regular in-house professional development training also has an important part to play in ensuring high quality, up-to-date teaching. There should be clear goals and high expectations set for *all* students across the whole ability range. Regular feedback on performance needs to be given to every student by means of a clearly understood system for monitoring performance and achievement. Students should be encouraged to participate in the running and organization of their school as a means of helping them identify with it and the staff, thereby building a sense of mutual respect and more positive learning and behavioral features. Additionally, the quality of the actual learning environment (clean, attractive, well organized, and not overcrowded) warrants serious consideration. Complementary to these findings, a report in 2001 prepared for the International Academy of Education by Stella Vosniadu titled "How Children Learn" identified key factors to be active constructive involvement of the learners, their social involvement, meaningful activities, the development of learning strategies, engagement in self-regulation, and being reflective.

What was much more open to speculation was how exactly these aims could best be met. Here the literature on school improvement (in contrast to school effectiveness) has provided many helpful ideas about the process of implementing change (Fullan, 1993, 1999), but little on the actual nature of the curriculum itself. It was the recognition of the potential value of combining the lessons from the school effectiveness/improvement literature and cognitive education approaches that gave rise to the concept of the Thinking School. Out of the fusion of these two sets of ideas, we were able to construct our definition of what a Thinking School would look like, sound like, and feel like, and to identify a number of criteria that a school would need to meet to fit (fulfill?) that definition.

■   A DEFINITION: WHAT IS A THINKING SCHOOL?

The definition of a thinking school that emerged is one of

> . . . an educational community in which all members share a common commitment to giving regular, careful thought to everything that takes place. This will involve learning how to think reflectively, critically and creatively, and to employing these skills and techniques in the coconstruction of a meaningful curriculum and associated activities. Successful outcomes will be reflected in students across a wide range of abilities demonstrating independent and cooperative learning skills, high levels of achievement, and both enjoyment and satisfaction in learning. Benefits will also be shown in the ways in which all members of the community interact with and show consideration for each other and in the positive psychological well-being of both students and staff.
>
> To achieve this goal, a whole school approach will be necessary whereby all stakeholders (including parents and school governors) are fully committed to the school's aims and how they can best be achieved. Staff will need to be specially trained and methods will need to be introduced into the curriculum for teaching the skills of thinking and associated cognitive and metacognitive strategies. The widest possible application of these skills and strategies should underpin all other aspects of the curriculum and should guide behavior policies and expectations about human interactions at every level and care for the environment. (Burden, 2006, pp. 2–3)

It can be seen that such a definition contains a number of necessary elements. First, and perhaps most important, is the notion of a community where everyone shares a common commitment. In this instance, that commitment is for everyone in and associated with the school to learn as much as possible about thinking and its relationship with learning, with the aim of building together what is learned into the curriculum and sharing this knowledge with the students. It assumes that learning and behavior are inextricably linked and that these new cognitive skills and knowledge will pervade all social as well as academic interactions that take place within the school at every level. Thus, worthwhile outcomes can be measured in terms not only of improved academic results, however measured, but also in terms of love of learning for its own sake, confidence in meeting new and unforeseen learning tasks both in and out of school, respect for others and their ideas, and a general sense of positive well-being.

Working with such pioneers as Gill Hubble from St Cuthbert's School in New Zealand (see Chapter 5: Journey of a Thinking School), who had already formulated many of these ideas based on Art Costa's vision of "School as a Home for the Mind," together with a group of thinking skills practitioners and trainers from the Kestrel organization in the United Kingdom, we followed this definition by constructing criteria for identifying and achieving a successful Thinking School. In sharing these criteria with various schools that had already started on the journey, the idea of Thinking School accreditation

became the logical next step. Fourteen criteria were established, and schools were offered the opportunity of producing a portfolio of evidence to demonstrate how these had been met. Important to note, each school would create a substantive action plan for their own unique development and outcomes as related to the criteria and share this with our team for feedback and recommendations. These plans were made with benchmarks, projected timelines, and a process for collecting evidence of attaining their own stated goals. When the school, after multiple years, came to a place where they had clear evidence of attaining their goals, they sent their portfolio in for review, feedback, and formal accreditation. A follow-up visit to the school by a member of the Cognitive Education Centre team made it possible for teachers, classroom assistants, school governors, parents, and pupils to be interviewed, lessons to be observed, and pupils' work to be shared. The very production of the portfolio makes it clear whether the set criteria have been met and, if so, the follow-up visit becomes more of a joint celebration and dialogue with "critical friends" rather than an inspection or formalized evaluation. In a sense, it is the whole school's opportunity to share with a knowledgeable and interested outside expert the benefits of their approach to becoming a thinking, learning, caring, sharing community.
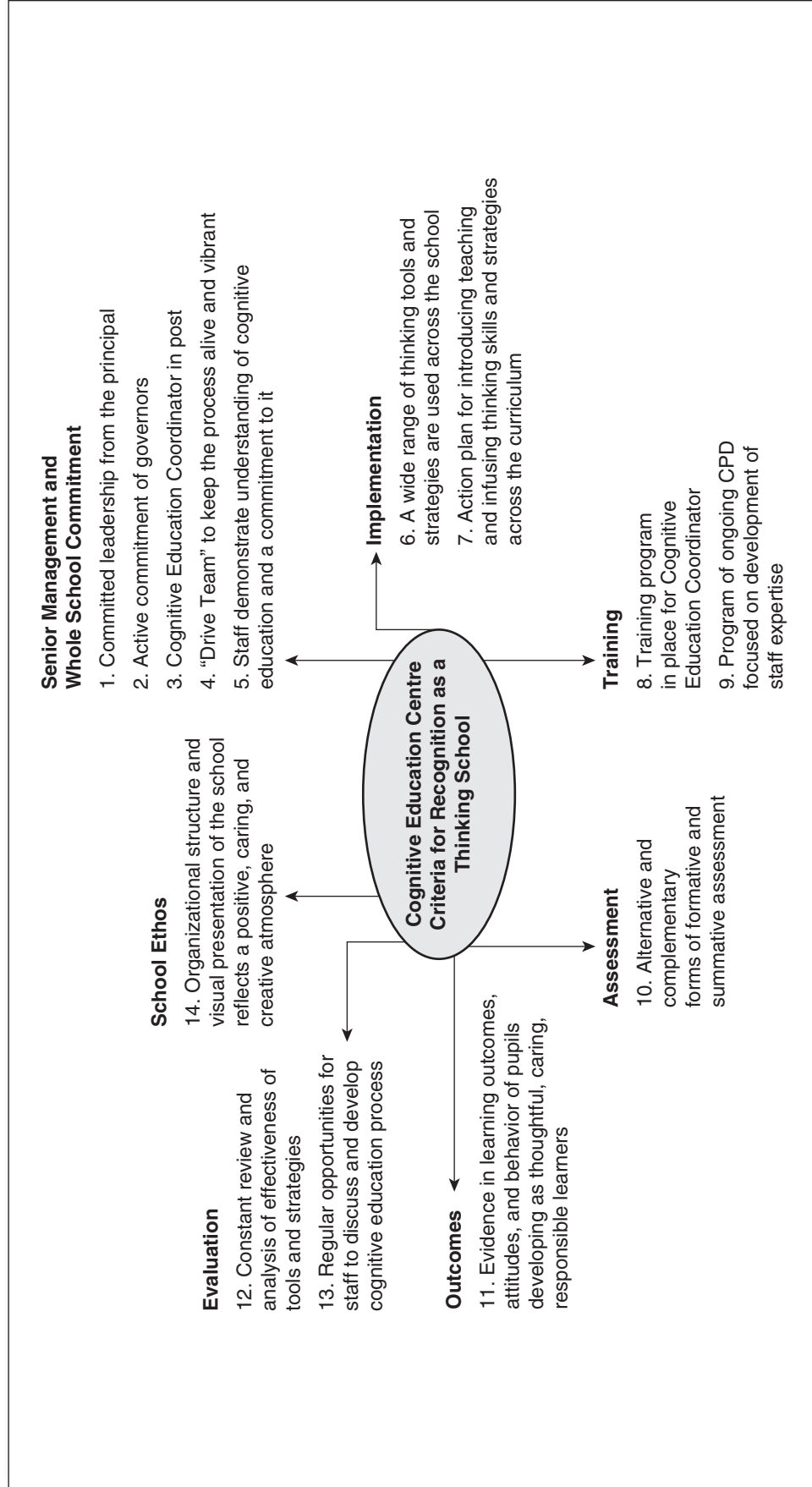
At the completion of this process, a report is produced for the school. This is followed by a certificate and trophy, and the right to print the CEC logo on any formal school literature for a period of 3 years, when reaccreditation is required. This process is thus not an endpoint but marks a step along the way of a the journey of transformation from a school community focused on learning content, toward one that is authentically dedicated to all students, staff, and administrators exploring a lifetime journey, individually and collectively, learning how to learn.

CRITERIA FOR ACCREDITATION ■
AS A THINKING SCHOOL

The identified criteria (See Figure 4.1), their reasons for selection and the kind of evidence needed to show that they have been met, are presented below. These criteria have been used over the past 10 years and offer guideposts but no linear route toward the process of growing a Thinking School. This is not a checklist but an array of actions and descriptors, expressed as commitments that may be redefined and translated across cultures and countries.

1. **Leadership** There is a need for the principal/head teacher to have made a formal commitment to cognitive education as a means of school improvement as a central aspect of the school's development plans. This is because all the school effectiveness/improvement literature identifies the crucial importance of leadership in the change process. This is most readily shown in the printed documentation that the school makes available to current and prospective parents and to reports to the school board members/governors. It will also become endorsed by an interview with the principal about her or his underlying values and future plans in the follow-up visit to the school.

Figure 4.1 Criteria for a Thinking School

**Senior Management and
Whole School Commitment**

1. Committed leadership from the principal

2. Active commitment of governors

3. Cognitive Education Coordinator in post

4. "Drive Team" to keep the process alive and vibrant

5. Staff demonstrate understanding of cognitive education and a commitment to it

Implementation

6. A wide range of thinking tools and strategies are used across the school

7. Action plan for introducing teaching and infusing thinking skills and strategies across the curriculum

Training

8. Training program in place for Cognitive Education Coordinator

9. Program of ongoing CPD focused on development of staff expertise

School Ethos

14. Organizational structure and visual presentation of the school reflects a positive, caring, and creative atmosphere

**Cognitive Education Centre
Criteria for Recognition as a
Thinking School**

Assessment

10. Alternative and complementary forms of formative and summative assessment

Evaluation

12. Constant review and analysis of effectiveness of tools and strategies

13. Regular opportunities for staff to discuss and develop cognitive education process

Outcomes

11. Evidence in learning outcomes, attitudes, and behavior of pupils developing as thoughtful, caring, responsible learners

2. **School Board** This commitment to cognitive education must have the explicit support of the community school board members. In the United Kingdom, the school board members together are called the *governors* and are the body most responsible for all aspects of the running of a school. There have unfortunately been occasions when an enthusiastic principal/head teacher has been frustrated by a governing body that has failed to see the full benefit of a cognitive approach but has been more influenced by a drive for examination success at all costs and has seen information transmission and rote learning as the only way to achieve this. For this reason a formal statement of support by the Chair of Governors is necessary, together with evidence of ongoing support from the governors in the minutes of their meetings, which may well include a record of how they themselves have been informed about or even trained in the cognitive approach. Again, at the visiting stage, it will be necessary for the Chair of Governors and, if possible, one or two others to be interviewed.

3. **Coordinator** It is necessary for each school to have a well-respected leader as the formally appointed member of staff as their Cognitive Education Coordinator to organize and oversee the implementation of the cognitive education development agenda. There are several reasons for this. It is usually impractical for the principal to take on this role, but unless it is seen as a highly prestigious post within the school, particularly in large schools, research has shown that the cognitive agenda can be easily sidelined or undermined by competing demands. Here we are looking for details of the appointed person's background and experience, particularly with regard to their previous and current training in different cognitive approaches. It will be the responsibility of the Cognitive Education Coordinator (titles sometimes vary) to prepare the portfolio of evidence about how the set criteria for recognition as a Thinking School are met.

4. **Task Force** One of the first tasks of the Cognitive Education Coordinator after their appointment should be to establish a task force or subgroup of colleagues, from across curriculum subjects in large schools, to ensure that communication and cooperation takes place across the school and that discussions amongst staff and the teaching of thinking skills and strategies can occur by means of a cascade model. The requirement in the United Kingdom for all schools to devote a specific number of hours each term to the in-service training of staff means that cognitive education can readily become a regular aspect of professional development sessions. This will help overcome the dangers of the hero-innovator tendency and will prove vital in leading to a committed "critical mass" of cognitively orientated staff. Evidence here should take the form of listed names and roles, together with recorded details of inset sessions, discussions and planning meetings.

5. **School-Wide Design** This should in time lead to the vast majority of the school staff, including learning support assistants, demonstrating a clear understanding of what is meant by a Thinking School, why it has been undertaken, and how they can best contribute to it. This should be demonstrated in their pedagogy and in the nature of the tasks they set and the quality of the work produced by their students. The evidence portfolio should demonstrate the

work of students across a range of subject areas and/or topics, as well as examples of work across the ability range.

6. **Implementation of Models/programs** Implementation of a cognitive curriculum is most likely in the first instance to be by means of an examination of the major cognitive programs. This should lead to the adoption of a least two approaches, models, or programs over a 3-year period. This may involve some degree of trial and error learning, that is, by deciding to reject one or another of the programs and favoring others that seem to fit more readily with the school's vision and action plan. (Clarification: *Program* in this case means that schools identify a model, an approach, and/or a guiding theoretical framework that is research-based and practical and it is implemented across the school in a systematic way and integrated with the daily life of the school. It is not simply an "add-on" set of activities or "best practices," or a rigid and isolated curriculum separate and apart from the flow of classroom and school-wide activities. The approach must also not exist to simply improve teaching, but a coherent design that is student-centered so that students become fluent in the approach.) At the time of writing, the most popular and well-founded programs in the United Kingdom appear to be David Hyerle's Thinking Maps, Edward de Bono's Six Hat Thinking, variations of Matthew Lipman's Philosophy for Children, Art Costa's Habits of Mind, and Guy Claxton's Building Learning Power. However, none of these programs is considered to be either necessary or, by themselves, sufficient; each school will develop its own unique approach to the curriculum, which will inevitably include some "homegrown" activities.

i. Schools tend to vary in the order in which they begin, but no school achieving accreditation has yet indicated that any one program fulfils all the requirements of a cognitively oriented curriculum. Two is an absolute minimum to start with, but gradually schools find that they can build on their growing confidence and expertise by taking on complementary programs like Adey and Shayer's CASE, CAME, and Let's Think programs, the Thinking through History, Geography, and so on programs constructed mainly at Newcastle University, or by developing their own homegrown approaches. The evidence of this process and the reasoning behind the adoption and/or rejection of different approaches should be clearly documented.

7. **Action Plan** All this should be part of an Action Plan that has been drawn up by the Cognitive Education Team, endorsed by the principal and governors, and shared with every member of staff, including support staff, playground helpers, and building supervisors. A drive team that consists of a leadership team including teachers representing various dimensions of the school is essential for developing this plan and assessing the integration of the approach over time.

8. **Developing Expertise** It is obviously important that a Cognitive Education Coordinator needs himself or herself to be highly trained and confident in a range of potentially useful programs and detailed techniques and

should see this as an essential ongoing aspect of his or her role. It is not enough for someone in this position to have attended a preliminary training course in a particular technique and expect to remain ahead of the game. Details of this person's ongoing Continuing Professional Development program must therefore be made available, including details of how they are keeping abreast of current thinking and pedagogy.

9. **Continuous Professional Development** All staff should be encouraged to attend external courses or should receive constant in-house training by the home team and/or highly rated external consultants. Documented reports of such training and its outcomes should also be available for public scrutiny.

10. **Alternative Assessment Approaches** Taking a cognitive approach to the curriculum carries with it assumptions about alternative forms and outcomes of assessment; formative assessment for learning should be the norm running alongside more conventional assessment of learning outcomes. We would also expect to see an emphasis on pupil self-assessment and peer assessment as part of the regular assessment process. Most schools have found that Anderson's revision of Bloom's Taxonomy provides an excellent framework for this form of assessment. A Thinking School will also have considered possible alternative and complementary ways of assessing learning outcomes such as enhanced pupil self-esteem and increasing enjoyment in learning and increased staff satisfaction in teaching.

11. **Evidence** At the end of the day, there is a requirement for evidence of positive learning outcomes, attitudes, and behaviors of the pupils to indicate that they are operating as thoughtful responsible learners who are able to articulate how and why thinking skills and strategies are a vitally important aspect of all that occurs in their schools. This can be seen in the nature and quality of the pupils' work (including homework), interest they show in their work, positive attitudes toward school, enjoyment and confidence in learning, good attendance and behavior records, a significant decrease in bullying, and improved attainment and exam results, where this is clearly necessary. Much of this can be revealed during the evaluation visit to the school, when interviews with individual and groups of students plays a significant role, but will also require careful record keeping of critical incidents and other indications of change.

12. **Continuous Growth** Few innovations ever work completely smoothly from start to finish. In fact, becoming a recognized Thinking School does not signify the end of the journey, merely a significant moment along the way. This implies that there will be a need to constantly review the effectiveness of the thinking programs and tools employed in developing pupils' metacognition and wider thinking strategies. A Thinking School will constantly be on the lookout for additional or useful approaches to enhance their children's learning, and for ways of evaluating these.

13. **Participation** The whole school approach means exactly that. Here we are looking for evidence that all members of staff are being encouraged to discuss on a regular basis the processes of thinking and how it can be maintained and improved. During the accreditation visit, the evident enthusiasm of all staff

members (as well as that of the students) for the cognitive approach and their ability to identify its benefits will be a significant feature in illustrating how well this is working. This will apply also to the way in which new staff are recruited and inducted into this way of working.

14. **School Ethos** All the above should be manifest in the whole ethos of the school, in the way it conveys a positive, caring, and creative atmosphere to all stakeholders and visitors, while at the same time demonstrating that careful thought has been put into its organizational structure and visual presentations. This is likely to be shown in examples of the pupils' work and displays that adorn the school, the way that visitors are received and treated, and the general "feel" of the way in which everyone goes about their business.

■ EVALUATING OUTCOMES: SURVEY RESULTS

By the end of July 2013, more than 90 schools across England, Wales and Northern Ireland, Australia, Thailand and New Zealand had successfully navigated the accreditation process. The ratio of primary to secondary school stands at about 5:1, but every level of socioeconomic and cultural background has been represented. Some are small, three-teacher schools, others cater for more than a thousand students with over one hundred staff. Of the secondary schools, four are single-sex schools, while three are comprehensives. Almost all are within the public school sector and about a quarter are faith-based.

In 2013, the CEC at Exeter University issued findings drawn from surveys of 55 accredited Thinking Schools that responded to our request for feedback (see Appendix A). In summary, the preliminary results are encouraging because there is an overwhelmingly positive reporting by schools of the influence on their schools, academically in the area of increased attainment, quality of instruction (lessons by teachers), and the notable feedback from schools about the importance of the whole school approach.

The survey focused on five key areas, as follow:

1. Satisfaction with the Thinking School approach by accredited schools

2. Attainment

3. Thinking Schools International approaches adopted by Thinking Schools (i.e., Thinking Maps, Habits of Mind, Philosophy for Children)

4. Evaluation Methods of the Thinking School approach

5. 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 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.
- All five major Thinking School International programs are reported to be highly effective.
- 82% of accredited schools would welcome more support with their evaluation methods.
- Benefits greatly outweigh issues.

When we look more closely at the survey results, we see some of the highest marks in the areas of student self-confidence, involvement, collaborative learning, and, significantly, "reflection on learning." A very high percentage of schools also reported the both teacher-questioning and student-questioning skill rose across their classrooms. Of course, often these powerful indicators of outcomes in a school get overshadowed by the quantitative reporting of test results. That 89% of the surveyed schools stated that they say a direct link to improved attainment is thus important to note. As one head teacher stated:

> In our last inspection report, the school (Cardiff High School) was awarded 7 grade 1's, the highest number possible. In the year we were inspected, the school achieved the highest percentage of grade 1 lessons for any secondary school in Wales, and this was attributed largely to our thinking skills approaches . . . Despite our pupils becoming far more diverse, ability wise, over the last ten years, our exam results have gone up year on year. (Thinking Schools International, n.d., pp. 2–3)

In addition to our survey, there is also detailed reporting from Thinking Schools that have been evaluated by Ofsted, the government's education evaluation unit. In the United Kingdom, all schools are required to make themselves available at short notice for full-scale inspection by a team from Ofsted, *Her Majesty's Inspectors of Schools.* These inspections are intensive and focus on a number of aspects of a school's organization, which are subsequently judged to be outstanding, good, adequate, or inadequate. Schools are rated on their overall effectiveness, on their capacity for sustained improvement, on pupil outcomes regarding their attainments and the quality of their learning and progress, and whether the pupils enjoy learning, feel safe, demonstrate positive behavior, contribute to the school and community, and are developing workplace skills for their future economic security, as well as the extent of their moral, social, and cultural development. The quality of teaching is also assessed, involving the use of assessment practices to support learning and the effectiveness of care, guidance, and support. Finally, a judgment is made of the effectiveness of leadership and management, engagement with parents, and the effectiveness of the governing body in encouraging equality of opportunity and fostering community cohesion. Statistics show that 9% of primary schools and 13% of secondary schools inspected will receive a rating of good or outstanding. The vast majority of the 15 schools inspected soon after achieving Thinking School status were rated by inspectors as outstanding (60%) or good with outstanding features (27%), with many receiving specific mention for the unique

contribution of the cognitive approach to the pupils' learning, as is illustrated in the following quotes from publicly released Ofsted reports (see http://www .ofsted.gov.uk/schools), each submitted by different evaluation teams.

> Beechwood Primary School provides an outstanding quality of education. Its identity as a Thinking School is at the heart of its work, whether it is in encouraging children to think about others or to think things out for themselves.
>
> This outstandingly successful school (St Michael's RC Primary) fully meets the aims of its challenging mission statement by being a "creative and thinking school" and giving each pupil a unique educational experience.
>
> Across the school (Monnow Primary) pupils' problem-solving skills, creative skills, their willingness to work with others, and their awareness of how to improve their own learning and performance all have many outstanding features.
>
> An outstanding feature is the focus on "thinking skills" across the school (St Mary's Primary). This plays a significant role in teaching pupils how to learn effectively. It is an important factor in the good progress they make and in their preparation for secondary school and later life.

■ FURTHER DEVELOPMENTS

One of the findings from our survey was the interest shown in gaining more support for new evaluation methods for moving their vision of a Thinking School forward. The search now is for ways of monitoring and recording a range of possible outcomes and of demonstrating the benefits that cognitive education can bring. A number of questionnaires have been developed at the Cognitive Education Centre (CEC) for approaching this task, including the Myself-As-a-Learner Scale (MALS) and Myself-As-a-Thinker Scale (MATS), a scale to measure student reflections on the quality of mediation received and a scale to measure teachers' reflections on the impact of introducing Thinking Maps and other approaches into their classrooms, respectively. At the time of this writing, a considerable amount of data has been gathered from several schools employing these scales without this being fully analyzed, but the following informal outcomes have been very apparent: (1) Where there has been obvious room for improvement, attainments have risen, (2) attitudes to toward school and to learning have been shown to be positive across the board, and (3) bullying and negative behavior is virtually nonexistent.

The expressed attitudes of more than 90% of the teaching and support staff in every accredited school reflect high personal satisfaction and enjoyment in their chosen profession.

While these outcomes are inspiring, we know that the journey toward becoming a Thinking School has no endpoint. Initial accreditation is provided for a 3-year period, after which the school needs to provide evidence that it has continued to move forward in its quest to demonstrate that an emphasis on the

transformational process of teaching and learning offers far more than one in which information transmission rules the day. Several schools have already sought and obtained reaccreditation after reaching the end of this initial qualification period with only three falling by the wayside. The notion of an Advanced Thinking School has subsequently been raised by many of these schools, providing the CEC with the task of finding ways of identifying whether and how well they have moved forward in that time (see Richard Coe's Chapter 6 describing a school that has received Advanced Thinking School accreditation). As well as improved academic standards across the board, high attendance rates and expressed high levels of satisfaction on the part of students, parents, and teachers, one important criterion currently being considered is the production of evidence of student, staff, and/or parental responses by means of questionnaire surveys or homegrown research projects.

Another criterion already taking shape is how well the school has been able to "spread the word" and influence the take-up of these ideas in other schools within their country and around the world. Another may be the way in which the school has been able to apply the Thinking Schools approach to considering "big questions" relating to more global issues of a practical and philosophical nature. More recently, an International Thinking Schools Association is being established whereby worldwide networking between schools taking a similar journey will begin to use modern digital technology to share ideas and experiences. Schools' use of modern technology thus becomes a further area for exploration and development as part of their thinking journey.

It would be unwise to claim too much for what as yet is an exciting and evolving educational movement that is a synthesis of new ideas with past practices and approaches. There have been plenty of so-called educational revolutions that have withered on the vine and are now barely remembered, if at all. The whole school approach to cognitive education, at least in this phase, is still young. The production of "hard" evidence of a range of positive outcomes will undoubtedly help stave off the critics and advocates of the *anciene régime,* but in the meantime, the following quote from the head teacher of *Rhydypenau* school, reflecting on the having taken this path, leaves little doubt about the school's conviction of its effectiveness:

> Our school has embarked upon a series of exciting initiatives, all under the umbrella of a 'Thinking School.' This work has involved all children and parents, governors and staff at school, demonstrating the value of all working together to create within our school an ecology of reflection, growth and refinement of practice. It has assisted us in promoting Rhydypenau as a community of confident, enthusiastic learners. . . . our accreditation as a "Thinking School" has been an exciting journey, a journey of challenge and a journey of change: change because teachers have been asked to adopt new teaching tools, develop their own knowledge and skills; challenge because it has involved some changes to the teachers' role from transmitters of information to facilitators of opportunities for children to understand. They have moved from being predominantly "the sage on the stage to a guide on the side." (Thinking Schools International, n.d., p. 1–2)

QUESTIONS FOR ENQUIRY

Bob Burden articulated 14 criteria for schools to use as benchmarks for determining the extent to which they have developed as a Thinking School. What other criteria might you use for this purpose?

What critical shifts in how we conceptualize education, locally and globally, need to occur if becoming a Thinking School is not seen as such a radical departure from the prevailing models that exist today?

What are the major trends we see in the world today, and how might Burden's vision for Thinking Schools address or even anticipate these emerging forces?

It's easy to say that a "whole school" approach will lead to transformational change. Beyond specific programmatic decisions, what approaches should a "whole school" engage in that will truly transform it into a Thinking School rather than one that simply strengthens existing paradigms?

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