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A context for cognitive education: Teachers’ beliefs


Simon Gibbs, Reader in Educational Psychology, University of Newcastle, UK. simon.gibbs@ncl.ac.uk

Abstract

Much emphasis in the field of Cognitive Education is on the effects for children and young people. Rather less attention has been paid to the characteristics of the educator and context. Even less attention seems to have been given to the interaction between teachers and learners and the appropriate contingencies. In this paper I draw on literature that demonstrates the salience of teachers’ beliefs in their efficacy as educators. Teachers’ beliefs in their efficacy have been shown to be related to the achievements of their students (Caprara, et al, 2006; Guo, et al, 2010). I also draw on our own research (Gibbs & Powell, 2012) that indicates that teachers’ collective beliefs are related to pupil inclusion and achievement. This is related to evidence suggesting that school leadership style is a factor in determining how effective teachers believe they will be and the outcomes for children.

In conclusion I suggest that these are important considerations for the development of effective cognitive education. Questions for practitioners and researchers in this field include:

1. What is it that enables cognitive educators to believe they can be effective and enhance children’s cognitions and metacognition?
2. In relation to teachers’ efficacy beliefs and associated practice what are viable analogies with the principles and practices of cognitive education?
3. If teacher efficacy has been shown to enhance pupil achievement in certain areas why might this be true for cognitive educators?
4. How might the ideas in this paper mediate the learning and practice of those who mediate children’s learning?
5. How might cognitive education enhance children’s self-efficacy beliefs?

Introduction

I stand before you as an ‘Educational Psychologist’ (in the British sense; probably more likely described as a ‘School Psychologist’ elsewhere) who is responsible for training Educational Psychologists and with significant personal and professional concerns for the well-being of teachers.

I will start this talk with a brief outline of some of the context. I will then discuss issues relating to teachers’ beliefs and school ethos. I will close by asking: What’s all this got to do with Cognitive Education?
A context for cognitive education: Teachers’ beliefs

What counts as ‘education’ and the processes implicated in effecting it may lack universally agreed definitions. Indeed, educational policies (that might converge on a workable definition) have been described as being (at least sometimes) irrational, unscientific ‘shots in the dark’ (Ball, 2012). However, whatever the aim(s) of education may be and about which there may be much disagreement, there is probably agreement that in any event at the very least education involves the development of knowledge and understanding (Hirst & Peters, 2012).

The challenge of developing knowledge – or knowledge creation - is a challenge for educators: how do we make best use of the available resources (educators and learners included), develop appropriate environments and pedagogies that facilitate learning, and thereby generate and transmit new knowledge and skill (Goldman & Scardamalia, 2013)? Much of the focus of work to date in the field of cognitive education that has considered such issues, has been concerned with developing ‘student capabilities’ (Goldman & Scardamalia, 2013; Roediger & Pyc, 2012; Talkhabi & Nouri, 2012). Some attention has also been given to creating the right sort of psycho-educational and organisational environment (too little has been said about the physical environment). A trajectory for change in the characteristics of knowledge-creating organisations has been proposed by Marlene Scardamalia and her colleagues (Scardamalia, Bransford, Kozma, & Quellmalz, 2012). These include (p248/9):

<table>
<thead>
<tr>
<th>21st century skills</th>
<th>Entry level</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creativity and innovation</td>
<td>Internalize given information; beliefs/actions based on the assumption that someone else has the answer or knows the truth</td>
<td>Work on unsolved problems; generate theories and models, take risks, etc.; pursue promising ideas and plans</td>
</tr>
<tr>
<td>Communication</td>
<td>Social chitchat; discourse that aims to get everyone to some predetermined point; limited context for peer-to-peer or extended interactions</td>
<td>Discourse aimed at advancing the state of the field and at achieving a more inclusive, higher-order analysis; open spaces encourage peer-to-peer and extended interactions</td>
</tr>
<tr>
<td>Collaboration/teamwork</td>
<td>Small group work: divided responsibility to create a finished product; the whole is the sum of its parts, not greater than that sum</td>
<td>Shared intelligence from collaboration and competition enhances existing knowledge. Individuals interact productively and work with networked ICT. Advances in community knowledge are prized over individual success, while enabling each to contribute to it</td>
</tr>
<tr>
<td>Critical thinking, problem solving, and decision making</td>
<td>Meaningful activities are designed by the director, teacher, or curriculum designer; learners work on predetermined tasks set by others</td>
<td>High-level thinking skills exercised in authentic knowledge work; the bar for accomplishments is continually raised by participants as they engage in complex problems and systems thinking</td>
</tr>
<tr>
<td>Citizenship—local and</td>
<td>Support of organization and community behavioral norms; “doing one’s best”;</td>
<td>Citizens feel part of a knowledge creating civilization and aim to contribute to a global enterprise;</td>
</tr>
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</table>
Now this may be all well and good in principle, but it is, I suspect, based on the premise that those who structure, manage and lead practice in the classroom (teachers) are continuously flexible, adaptive and keen to learn and develop. We like to assume and would no doubt want to validate that; yet we also know that teachers are busy, hard working and have their noses on the grindstone dealing with prevailing orthodoxies and, all too often, becoming burned-out as a result. Nonetheless, in relation to the interests of, I assume, most here today, there would probably be some agreement with Woolfolk Hoy and Weinstein (2006) that the ability to provide confident management of the learning environment is a primary requirement for successful teaching and learning (however we conceptualise ‘teaching’). We would almost certainly also recognise the need for teachers to be in dialogue with children and to be able to provide ‘space’ for reflection – as recently emphasised by Alina Reznitskaya and Maughn Gregory in their paper in the current issue of ‘Educational Psychology’ (Reznitskaya & Gregory, 2013).

However, in recognition of the current reality for very many teachers in schools but also out of a concern to support the development of appropriate pedagogies and inclusive education, I want to say something at this point about teachers’ beliefs, resilience, and well-being.

**Context**

As a context for this it should be noted first that recent data show that in England over £700m per annum is being spent on initial teacher training (TDA, 2011). Second: probably about half of all those who qualify as teachers leave the profession within 5 years of gaining their qualification (Dolton & Klaauw, 1999; Hayes, 2004; Ingersoll & Smith, 2003). Third point: one of the greatest challenges to teachers’ well-being is in relation to children’s behaviour. (Children’s behaviour is one of the most frequently cited reasons given by teachers for leaving the profession (Ingersoll & Smith, 2003)). Other recent data (DfE, 2010) has indicated that in England over half of the teaching work force (308,800; 56%) took some sickness leave in 2009, with an average 4.9 days absence per teacher per year. There is, therefore, a need to consider how to enhance teachers’ well-being and/or resilience in order to both capitalise on the financial investment in their initial training as well as ensuring well-motivated, effective teachers who participate in stimulating the growth of knowledge-creating organisations.

**Resilient teachers**

Whilst clearly not a simple relationship, there is good evidence that resilient teachers are more likely to be effective teachers (Gu & Day, 2007; Stuart et al., 2012). Developing our understanding of factors that may sustain (or erode) the resilience, motivation, engagement and effectiveness of teachers is, therefore, important. Attention may then be given to enhancing support for teachers’ resilience and well-being. I have suggested elsewhere that greater understanding of the conditions that enhance teachers’ efficacy beliefs would
facilitate teacher well-being and educational reform, and enhance the development of inclusive education (Gibbs, 2007).

So, an important, though not yet clearly answered set of questions is about how teachers gain and maintain beliefs in their efficacy.

**Teachers’ efficacy**

Theories of ‘Teachers’ self-efficacy beliefs’ that have developed from Albert Bandura’s original Social – Cognitive theory (Bandura, 1993; Ross, Hogaboam-Gray, & Gray, 2004; Tschannen-Moran & Hoy, 2001) refer to the strength of the beliefs that individual teachers hold that by means of their personal and / or collective agency they can act in ways that positively influence aspects of children’s educational development. Importantly, as Bandura and others have stressed, self-efficacy beliefs are domain specific (Bandura, 1997; Goddard, Hoy, & Woolfolk Hoy, 2004). In line with this, researchers have investigated the relationship between individual teachers’ beliefs, the impact these may have on classroom practice and, ultimately, children’s achievement (Ashton & Webb, 1986; Caprara, Barbaranelli, Steca, & Malone, 2006; Ross, 1992; Tournaki & Podell, 2005).

Related to individual teachers’ individual, personal beliefs, collective teacher efficacy refers to the perceptions of teachers in a school that the actions of the staff as a whole will have positive effects on students (Goddard, 2002). It has been suggested that a reason for schools to understand and value collective teacher efficacy is the strong connection it ultimately has with group goal attainment. Thus, ‘collective teacher efficacy helps to explain the differential effect that school cultures have on teachers and students…some schools have a positive influence … whereas the impact of other [similar] schools is much less productive’ (Goddard et al., 2004, p. 9).

**School ethos**

The relationship between individual teacher efficacy beliefs and the collective efficacy beliefs of the staff group has been investigated by Goddard and Goddard (2001) who found that collective efficacy beliefs were predictive of individual teacher efficacy beliefs. It has also been shown that the relationship between individual and collective efficacy beliefs may be mediated by individuals’ sense of themselves as contributing members of the organisation (Friedman & Kass, 2002). On that basis it seems possible, therefore, that the nature and management of the school as an organisation can be highly influential on individual and collective efficacy beliefs (Bandura, 1997; Chen & Lee, 2007; Goddard & Goddard, 2001; Ross & Gray, 2006; Stanovich & Jordan, 1998). Some small scale studies that we have undertaken in Newcastle appears to endorse this (Brown & Gibbs, 2013; Powell & Gibbs, 2013). In our work we have found that the nature and style of school leadership is a significant factor in facilitating the development staff efficacy beliefs.

**Schools and cognitive education**

So, to return to theme of this conference: how and why might this matter for cognitive educators if the aims of cognitive education include the creation of knowledge and unfolding potential?
In Bandura’s formulation the main sources of self-efficacy come from ‘mastery experience’, ‘vicarious experience’, ‘verbal persuasion’ and ‘physiological and affective states’ (Bandura, 1997, p. 19). It seems to me that the training and professional experience of many individual providers of cognitive education can provide educators with valid information from all four of these sources.

Trainee educational psychologists, for instance, very quickly fall under the spell of dynamic assessment. The reasons why are not hard to see. The training they get, such as that offered by Fraser Lauchlan (Lauchlan & Carrigan, 2013), quickly gives them a sense that this is something that they can do successfully. They get very rapid and powerful feedback from the young people they work with and teachers who commission the work, that both the process and information they provide is engaging and helpful. This all adds to their growing sense of efficacy as practitioners. This is further endorsed by evidence from dynamic assessment that cognitive education works (for instance, Tzuriel, 2011).

Of course this also illustrates one of the main practical and theoretical principles of cognitive education: that it enables participants to build on their strengths (Sternberg, 2003). By working in this way children’s efficacy in practical problem solving activities (for instance) is enhanced: they get feedback to show them how to do something and that they can do things they might otherwise have learned they could not do.

Helping educators and learners learn and generate new knowledge and understanding is, as I’ve already noted, one of the defining principles of cognitive education.

Cognitive education has been differentiated from more ‘traditional’ modes in terms of the difference between knowledge creation and knowledge transmission (Talkhabi & Nouri, 2012). Cognitive education is clearly concerned to use reasoning, is learner and ideas centred, collaborative, opportunistic. To instantiate this educators can clearly no longer engage in monologues to transmit a series of ‘truths’. They must enter into dialogue with students. In order to make the move from more traditional, monologic, modes of teaching, educators need to believe in the efficacy of dialogue and that in doing so ‘know’ that they are very effective managers of the learning environment.

There is some emerging evidence that teachers’ views of what constitutes education and learning can develop in this way (Dominguez, Vitiello, Fuccillo, Greenfield, & Bulotsky-Shearer, 2011; Essary, 2012; Jurow, Tracy, Hotchkiss, & Kirshner, 2012). Our recent work in Newcastle also suggests that enlightened school leadership can provide a context in which teachers develop more facilitative and dialogic learning environments (Brown & Gibbs, 2013; Powell & Gibbs, 2013). A challenge now is to persuade school leaders of the benefits of cognitive education.

If cognitive education is to have future, make a positive difference for all children and those responsible for their learning, it must enable schools and teachers to gain from it and not remain a minority, ‘fringe’ activity that may be seen as mostly the province of psychologists as assessors, a few teachers and a number of educational researchers. So, to what extent does the trajectory of change proposed by Scardamalia et al. (2012) provide an agenda for change that will appeal to policy makers, school leaders and, in practice, to teachers? How
will we support teachers in acquiring the belief that they can use Cognitive Education effectively and collectively as a means to generate new knowledge and transform education to become yet more inclusive? Or, to put it another way: if you want to transform education what do you believe (or know) you can do to produce the desired effects?

The more specific questions I want to leave you to consider are:

- What is it that enables cognitive educators to believe they can be effective and enhance children’s cognitions and metacognition?
- In relation to teachers’ efficacy beliefs and associated practice what are viable analogies with the principles and practices of cognitive education?
- If teacher efficacy has been shown to enhance pupil achievement in certain areas why might this be true for cognitive educators?
- How might the ideas in this paper mediate the learning and practice of those who mediate children’s learning?
- What organisational changes are necessary to maximise the effects?

References


