



Theories of action – teacher practice and student achievement

In this second article in a series of three **David Hopkins** and **Wayne Craig** explore the actions that teachers take and their consequences on the learning and achievement of students. They show how this raises significant implications for professional development.

The focus of these series of articles is on the improvement of student achievement through the development of professional practice within a systemic context. In the first article (published in the last issue of PDT) there was an analysis of the strategies for improvement at the school and local level, known as

the ‘powerful learning’ framework, that was developed in the Northern Metropolitan Region (NMR) of Victoria, Australia. This second article explores the concept of ‘theories of action’ which helped to create the subsequent ‘Curiosity Booklet.’ This handbook increases the skill levels of teachers to ensure impact on students’ learning.

■ ■ ■ Instructional Rounds

The use of ‘instructional rounds’ was the key strategy in developing a practice around the instructional core (described in the previous article) and in generating a common language of instructional practice within the Region. To do this we refined the generic instructional rounds leadership strategy, associated with the work of Richard Elmore and his colleagues, that was being adopted across the State (City et al. 2009). Our approach worked iteratively, but systematically, from the existing knowledge base of individual teachers to develop theories of action that disciplined and deepened the culture of teaching and learning of all teachers in the school and the Region. Critical to the success of the instructional rounds approach has been the development of ‘theories of action’. A theory of action is a link between cause and effect: *if* we take a particular action, *then* we expect that action to have specific effects. A theory of action connects the actions of teachers with the consequences of their actions—the learning and achievement of their students.

As our experience with instructional rounds has continued to deepen in Wales (Caerphilly County Borough Council 2012), in Australia (Northern Metropolitan Region 2011) and in London and elsewhere, five important lessons have been learned. They are:

- The first was that despite the phase or context of schooling, the theories of action were in most cases very similar.
- Second, this is not a ‘pick and mix’ approach—all the theories of action have to be integrated into the teacher’s professional repertoire if they are to impact in a sustained way on student learning.
- Third, and most importantly, all the theories of action are characterised by an approach to teaching that has enquiry at its centre.
- Fourth, some of the theories of action relate to the school and some to the practice of individual teachers.
- Fifth, all of the theories of action have a high level of empirical support in the educational research literature (Hattie 2009).

So to summarise, through the instructional rounds process an approach to teaching has been developed from the practice of teachers – across the Region – that if consistently applied will enhance not just the achievement, but also the spirit of enquiry of all students. The four whole-school theories of action emerging from the instructional rounds process are as follows:

1. When schools and teachers set high expectations and develop authentic relationships, then students’ confidence and commitment to education increases and the school’s ethos and culture deepens.
2. When teacher directed instruction becomes more enquiry focused, then the level of student achievement and curiosity increases.
3. By consistently adopting protocols for teaching, student behaviour, engagement and learning are enhanced.
4. By consistently adopting protocols for learning, student capacity to learn, skill levels and confidence are enhanced.

The implications of these whole school theories of action are discussed in more detail later. Meanwhile, it is to the ‘theories of action for teachers’ that we now turn in the following section.

■ ■ ■ The Six Theories of Action for Teachers

Below are the six theories of action for teachers and teaching that emerged from our work with schools in Northern Melbourne and elsewhere. Together with the four whole school theories of action noted in the previous section, they comprise the content of the *Curiosity* booklet that we recently published (Northern Metropolitan Region 2011). This handbook has a two page spread devoted to each theory of action: the left hand page contains a description of the individual theory of action, much as above; the right hand page showcases an educational artefact or tool that teachers can use to implement the theory of action in behavioural terms. This helps increase their level of professional skill to a point that it impacts on the learning of their students.

Harnessing learning intentions, narrative and pace

- When teachers set learning intentions and use appropriate pace and have a clear and strong narrative about their teaching and curriculum, then students are more secure about their learning, and achievement and understanding is increased.

It has become very clear from the instructional rounds that when teachers are clear about their learning intentions then the students become more engaged and feel more secure in their learning. But it is about more than just setting a learning intention or goal; importantly it is also about linking the intention to the learning outcome and success criteria for the lesson, as well as ensuring curricula progression. This becomes the basis for the narrative of the lesson. Teachers with a strong sense of narrative are able to engage with deviation, knowing how to bring the discussion back on track. Pace is also necessary to keep the lesson lively and through increasing tempo, deal with potential low-level disruption. A learning intention for a lesson or series of lessons is a statement that describes clearly what the teacher wants the student to know, understand and be able to do as a result of the learning and teaching activity. In formulating the learning intention it is essential to consider three components:

- An action word that identifies the performance to be demonstrated
- A learning statement that specifies what learning will be demonstrated
- A broad statement of the criterion or minimum standard for acceptable performance, e.g. 'By the end of the lesson you will be able to describe foundation concepts and questions in ...'

Setting challenging learning tasks - *When learning tasks are purposeful, clearly defined, differentiated and challenging then the more powerful, progressive and precise the learning for all students.*

In many of the instructional rounds conducted, we found that by and large, most students did not find the tasks they were set very challenging. Yet it is the tasks

that students do that predict their performance. This requires setting tasks that are within the student's 'zone of proximal development', if their learning is to progress. Usually, this involves having three or four 'graded tasks' available for each group with scaffolding around the task to ensure success. In *Looking in classrooms*, Good and Brophy (2008) identified the six components listed below as central to scaffolding support for pupils carrying out tasks:

1. Develop student interest in accomplishing the intended goal of the task.
2. Demonstrate an idealised version of the actions to be performed.
3. Simplify the task by reducing the steps.
4. Control frustration and risk.
5. Provide feedback that identifies the critical features of discrepancies between what has been produced and what is required.
6. Motivate and direct the student's activity to maintain continuous pursuit of the goal.

Closely associated with scaffolding is the gradual transfer of responsibility for managing learning. As students develop expertise they begin to assume responsibility for regulating their own learning, by asking questions and by working on increasingly complex tasks with a concomitant increase in learner autonomy.

Framing higher order questions - *When teachers systematically use higher order questioning, the level of student understanding is deepened and their achievement is increased.*

John Hattie reports in *Visible learning* (2009, p. 182) that questioning is the second most prevalent teaching method, after teacher talk. Most teachers spend between 35% and 50% of their time in questioning. Questioning has a positive impact on student learning – but this effect is associated more with higher order questioning which promotes more conceptual thinking and curiosity. The evidence suggests that most teachers ask low-level questions, related more to knowledge acquisition and comprehension. Research studies suggest that 60% of

teachers' questions recall facts and 20% are procedural in nature. Bloom's taxonomy (Anderson & Krathwohl 2001) of learning objectives is widely used as a basis for structuring questions, particularly higher order questions. They are:

- **Knowledge** – recall previous material learned
- **Comprehension** – demonstrate understanding of facts and ideas
- **Application** – solve problems by applying knowledge, facts and skills learnt in different ways and situations
- **Analysis** – examine information and break into parts, make connections and support ideas and arguments
- **Evaluation** – present judgements, recommendations and opinions
- **Synthesis** – compile information in different, more creative ways; choose other solutions.

The following sequence works well, as this approach makes everyone responsible for generating an answer, particularly when combined with some of the simple cooperative techniques:

- Frame a question to the whole class
- Allow students time to think—'wait time'
- Only then, call on someone to respond.

Connecting feedback and data - *When teachers consistently use feedback and data on student actions and performance, then behaviour becomes more positive and progress accelerates.*

Feedback is one of the most powerful influences on student achievement. That is clear from both psychological theory and research. In *Visible learning*, John Hattie (2009, p. 173) provides a powerful insight, as he describes his attempts to understand feedback:

It was only when I discovered that feedback was most powerful when it is from the student to the teacher that I started to understand it better. When teachers seek, or are at least open to, feedback from students as to what students

know, what they understand, where they make errors, when they have misconceptions, when they are not engaged—then teaching and learning can be synchronized and powerful. Feedback to teachers helps make learning visible.

In considering data and feedback that moves beyond the purely academic, Hattie suggests that a behavioural focus on student performance helps students to recognise the linkage between effort and outcome. In addressing this behavioural dimension of student performance and achievement, it is recommended that the teacher should:

- Model beliefs
- Focus on mastery
- Portray skill development as incremental and domain specific
- Provide socialisation with feedback
- Portray effort as investment rather than risk.

Committing to assessment for learning - *When peer assessment and assessment for learning (AfL) are consistently utilised, student engagement, learning and achievement accelerates.*

The generally accepted definition of Assessment for Learning (AfL) is:

'The process of seeking and interpreting evidence for use by learners and their teachers to decide where the learners are in their learning, where they need to go and how best to get there.' (Assessment Reform Group 2002).

This may be organised differently in different schools, but the rationale is always the same.

1. Clear evidence about how to drive up individual attainment.
2. Clear feedback for and from pupils, so there is clarity on what they need to improve and how best they can do so.
3. Clarity for students on what levels they are working at, with transparent criteria to enable peer coaching.



4. A clear link between student learning and lesson planning (Hopkins 2007).

The OECD project on formative assessment (2005) concluded that it is one of the most useful strategies in improving student performance. The following practices most consistently emerged during their research:

- Establishment of classroom cultures that encourage interaction and the use of assessment tools, establishment of learning goals and tracking individual student progress
- Use of varied instruction methods to meet diverse student needs
- Use of varied approaches to assess student understanding
- Feedback on student performance and
- Adapting instruction to meet learner needs active involvement of students in the learning process.

Teachers need to continue to develop their understanding of how students learn so they can help them to: reflect on how they learn; develop learning strategies and apply them in different circumstances; and engage in high quality dialogue with teachers, peers and others.

Implementing cooperative group structures - If teachers use cooperative group structures/techniques to mediate between whole class instruction and students carrying out tasks, then the academic performance of the whole class will increase as well as the spirit of collaboration and mutual responsibility.

Cooperative group work has a powerful effect in raising pupil achievement because it combines the dynamics of democratic processes with the discipline of academic enquiry. It encourages active participation in learning and collaborative behaviour by developing social as well as academic skills. The approach is highly flexible and draws on a wide range of methods – individual research, collaborative enquiry and plenary activities – and allows the integration of them all into a powerful teaching tool. It is most commonly used as part of the direct instruction model, both as part of teacher instruction and the structuring of group activities, although at times the teacher will use the approach to structure a whole lesson or series of lessons.

There is a wide range of strategies that comprise cooperative group work. They are all underpinned by the following five principles (Johnson & Johnson 1994):

1. Positive interdependence: When all members of a group feel connected to each other in the accomplishment of a common goal – all individuals must succeed for the group to succeed.
2. Individual accountability: Where every member of the group is held responsible for demonstrating the accomplishment of their learning.
3. Face-to-face interaction: When group members are close in proximity to each other and enter into a dialogue with each other in ways that promote continued progress.
4. Social skills: Human interaction skills that enable groups to function effectively (e.g. taking turns, encouraging, listening, clarifying, checking, understanding, probing). Such skills enhance

communication, trust, leadership, decision-making and conflict management.

5. Processing: When group members assess their collaborative efforts and target improvements.

Cooperative group work requires pupils to practise and refine their negotiating, organising and communication skills, define issues and problems and develop ways of solving them. This includes, collecting and interpreting evidence, hypothesising, testing and re-evaluating.

The curiosity booklet - As teachers and principals quickly embraced the Theories of Action it became apparent that, while the “different” style and language of the *Curiosity* booklet was highly engaging, it was the strong research base that stood behind the various theories that made the propositions so compelling. Our colleague John Hattie generously encouraged us to use his work to illustrate the likely effect size associated with each of the theories of action (Hattie 2009). This reinforced the view among principals and teachers that although significant progress had already been made, the possibilities were boundless if the Theories of Action were applied with precision.

The almost fervent adoption of the *Curiosity* booklet was reinforced by our emerging understanding of neuroscience that was being disseminated across the region at the same time. Work from a range of cognitive scientists including Daniel Willingham, *Why Don't Students Like School* (2009), John Medina, *Brain Rules* (2008), Mariale Hardiman, *The Brain Targeted Teaching Model for 21st Century Schools*, (2012) and Eric Jensen's (2005), *Teaching with the Brain in Mind* further encouraged practitioners. For example,

Willingham's (2009) notion that, “*People are naturally curious but we are not naturally good thinkers; unless the cognitive conditions are right, we will avoid thinking*”, served to emphasise the importance of a whole school focus on inquiry. “*People are naturally curious, but curiosity is fragile*”, reinforced the need to not only set challenging tasks but also set tasks that are just right – that is, tasks that are neither too easy nor too hard but right in the zone of proximal development (Willingham, 2009).

We have been both surprised as well as gratified by the enthusiasm that the *Curiosity* booklet has generated among teachers and Principals (Northern Metropolitan Region 2011). Although we say it ourselves, in a short time it has assumed an iconic status representing as it does the teachers commitment to their own professional learning and the Principals' engagement with school improvement and student learning. What became rapidly apparent however was that despite this enthusiasm and almost universal adoption, some schools were far better able to implement the theories of action in authentic ways. This is the conundrum we seek to reflect on in the final article of the series, which will appear in the next issue of PDT.

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