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Teachers Taking Up Explicit Instruction: The Impact of a Professional Development Model Including Directive Instructional Coaching

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Abstract: In this study we measured the impact of a professional development model that included directive coaching on the instructional practices of Western Australian primary school teachers taking up explicit instruction. We developed and validated protocols that enabled us to measure teachers' fidelity to the salient elements of explicit instruction and interviewed participants about the impact of the coaching program on student learning, their feelings of self-efficacy and attitudes to being coached. Numerical scores to indicate teachers' demonstration of explicit instruction lesson design and delivery components changed positively over the five observed lessons and directive coaching had a positive impact on teachers' competence and confidence. The elements of the coaching process that the teachers found valuable were the coach's positive tone, the detailed written feedback, and the specificity, directness and limited number of the suggestions. Implications for schools with reform-based agendas wanting to change teachers' instructional practices through instructional coaching are discussed.

Introduction

In Australia, there is growing interest in teacher-directed approaches that present new learning material to students in an explicit, direct and highly scaffolded manner. Despite evidence of their efficacy (Hughes, Morris, Therrien, & Benson, 2017; Kirschner, Stockard, Wood, Coughlin, & Khoury, 2018), these teacher-directed instructional approaches remain neither “politically or romantically correct” (Rosenshine, 1997, p. 1) amongst some educators. In contrast, enthusiasm for teacher-directed approaches has come from Australian politicians, policymakers and researchers and has been widely reported in the media (for example, Bitá, 2015; Ferrari, 2014; Hiatt, 2014; MacTiernan, 2014) as a tool to address the declining performance of Australian students in international testing (Thomson, De Bortoli, & Buckley, 2013). Buckingham (2016) attributed Australia's performance in PISA to the privileging of inquiry-based approaches and argued this needs to be revised in the light of evidence showing the greater effectiveness of teacher-directed, explicit instruction.

Particular teacher-directed instructional models, as opposed to isolated teacher behaviours such as giving clear and unambiguous instructions, include ‘Explicit Instruction’ (Archer & Hughes, 2011), ‘Explicit Direct Instruction’ (Hollingsworth & Ybarra, 2018), ‘direct instruction’ (Rosenshine, 1986; 2012) and ‘I do, We do, You do’ (Wheldall, Stephenson & Carter, 2014). Each have distinct characteristics but share a focus on ‘fully guided practice’ (Kirschner, Sweller & Clark, 2006) and fit under the umbrella term of explicit instruction.

Unlike Direct Instruction¹, which consists of a suite of commercially available teaching resources that developed from the pioneering work of Siegfried Engelmann in the 1960's (Engelmann, 1967, 2007), explicit instruction is not scripted. Instead, teachers must determine what new knowledge, strategy or rule they will teach and how this will be communicated to students in a fast-paced manner that provides guided practice and regular formative feedback. Although many of the instructional principles are similar to Direct Instruction, in explicit instruction the emphasis is on teaching behaviours that maximise student achievement (Rosenshine, 2012), rather than curriculum design. Hattie draws the distinction:

The teacher decides the learning intentions and success criteria, makes them transparent to the students, demonstrates them by modelling, evaluates if they understand what they have been told by checking for understanding, and re-telling them what they have been told by tying it together with closure (2009, p. 206).

In two recent Australian reports, the New South Wales Department of Education and Communities' Centre for Education Statistics and Evaluation highlighted "explicit teaching techniques" as one of three critical attributes of excellent teachers (2012, p. 5) and the second of seven evidence-based practices that yield higher student performance. "Explicit teaching practices involve teachers showing students what to do and how to do it, rather than having students discover or construct information for themselves" (NSWDEC, 2015, p. 8). A case study report on the school operations and pedagogical practices in place in nine high performing primary schools in Western Australia (as measured by national testing - National Assessment Program Literacy and Numeracy [NAPLAN]) identified "reading programs based on explicit teaching of synthetic phonics in the early years" as one of three common features (Louden, 2015, p. 3).

Further, in 2014, the Australian Federal Government funded a three year 22 million dollar 'Flexible literacy for remote primary schools programme' using two teacher-directed instructional approaches: Direct Instruction and Explicit Direct Instruction (DET, 2014). An evaluation of the programme reported that the instructional pedagogy had a positive impact on children's literacy outcomes (Dawson, McLaren, & Koelle, 2017, p. 117) and government funding was extended. Recent international commentary on explicit teaching is equally favourable (Coe, Aloisi, Higgins, & Major, 2014; Deans for Impact, 2015).

Constructivism has been the "prevailing orthodoxy" (Donnelly & Wiltshire, 2014, p. 10) in teacher education and curriculum design in Australia since the late 1970s (Boys, 2008; de Lemos, 2002; van Kraayenoord & Paris, 1994). Yet, despite teachers having many years to finesse child-centred practices, there has been a groundswell of interest in contrasting approaches, with many Western Australian schools seeking access to professional learning about teacher-directed instruction and in-class coaching for staff (Louden, 2015).

High quality professional learning is a key component in reform-based agendas in education. De Jager, Reezigt, and Creemers (2002) argue that teachers cannot be expected to implement instructional practices, like explicit instruction that require significant changes in teacher behaviour, without in-service training. However, the impact of professional learning to change teaching practice has, at best, a "mixed history" (Guskey, 2014, p. 10; Guskey & Yoon, 2009; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). Knight (2009) surmised that the best translation of professional learning into classroom practice that could be hoped for following "a one-shot workshop, was 15 per cent" (p. 22).

¹ Direct Instruction programs such as *Reading Mastery* (Engelmann & Bruner, 1983) are fully scripted and referred to by the uppercase DI. Explicit instruction and direct instruction refer to salient strategies from the same teacher-directed instructional model as DI but are unscripted and can be adapted to whole-class instruction. See <http://www.nifdi.org/what-is-di/di-vs-di>

It is widely recognised that few educational innovations realise their full impact without a coaching component (Bush, 1984; Costa & Garmston, 1994, Elder & Padover, 2011; Joyce & Showers, 1996, 2002; Veenman & Denessen, 2010; Truesdale, 2009; Yoon, Duncan, Lee, Scarloss, & Shapley, 2007). This limitation has drawn attention to the value of onsite classroom support. While there is no agreed definition of coaching and little research on its efficacy (Bloom, Castagna, Moir, & Warren, 2005, Denton & Hasbrouck, 2009; Neufeld & Roper, 2003; Neumerksi, 2013; Woulfin, 2014), there is no questioning the popularity of this teacher development strategy (Desimone & Pak, 2016). Studies confirming the critical role played by coaching to increase the likelihood that teachers transfer newly learned skills to the classroom have fueled interest in this practice (Bush, 1984; Cornett & Knight, 2009; Joyce & Showers, 1982).

Prompted by the interest in explicit instruction and the reported positive influence this pedagogy has on student outcomes (Archer & Hughes, 2011; Hattie, 2009; Hughes, Morris, Therrien, & Benson, 2017; Rosenshine, 2012) we wanted to investigate the impact of a professional development model that included a particular coaching approach on the practices and knowledge of teachers learning the explicit instruction teaching model. Put simply, we questioned whether in addition to providing professional learning, directive instructional coaching would change teachers' classroom practices and investigated how they would feel about participating in this process. The study reported here is the first research of its kind and we asked the following questions.

Research Questions

1. What impact will coaching have on the practices and knowledge of teachers learning an explicit instruction model?
 - a) What changes in feedback and lesson implementation scores will be observed over the course of the five-session coaching program for individual teachers?
 - b) How will teachers perceive the impact of the coaching program on their pedagogy?
 - c) How will teachers perceive the impact of the coaching program on their students' learning?
2. How will teachers feel about their participation in the process and will this change as the coaching program progresses?
3. What perceived benefits and drawbacks of the coaching process will teachers describe?

Selecting a Model of Explicit Instruction

Interpretation of the term 'explicit instruction' is very much in the eye of the beholder. To some, who emphasise 'explicit' as an adjective, the term pertains to a variety of practices that can include clear teacher explanations, delivering instructions, breaking learning into small, discrete and carefully taught steps (Westwood, 1995) or leaving nothing to chance so that children do not have to "ferret out" what they are supposed to be learning "on their own" (Rose, 2006, p. 19). Not surprisingly, there are wide variations in teachers' implementation of instructional practices that they consider to be 'explicit'.

In contrast, those who follow contemporary models such as *Explicit Direct Instruction* (Hollingsworth & Ybarra, 2018) and *Explicit Instruction* (Archer & Hughes, 2011), accept 'explicit instruction' as a construct that comprises of a particular set of instructional steps and cognitive strategies that collectively encompass more than just the need for teacher clarity.

Rooted in the early work of Rosenshine (1971, 1986) and validated further by recent

findings on human cognitive architecture (Kirschner, Sweller, & Clark 2006; Rosenshine 2012; Sweller, 2012) the authors of *Explicit Direct Instruction* emphasise the need to reduce working memory load and enable the transfer of information to long-term memory so it can be accessed automatically. Hollingsworth and Ybarra (2018) stipulate eight lesson design components (Concept Development, Guided Practice and Independent Practice, for example) and strategies to achieve this, including Checking for Understanding to “continually verify that students are learning what they are being taught” (p. 13).

When Archer and Hughes (2011, p. 1) acknowledge that explicit instruction is an “unambiguous and direct approach that includes both instructional design and delivery procedures” they also echo Rosenshine’s (2012) 17 principles of effective instruction. Their 16 elements of explicit instruction include “(5) begin lesson with a clear statement of the lesson’s goals and your expectations, (7) provide step-by-step demonstrations” and “(13) provide immediate affirmative and corrective feedback” (2009, pp. 2-3). Unlike Hollingsworth and Ybarra (2018), who draw particular attention to checking for understanding rather than repetition, Archer and Hughes (2011) stress the value of “briskly paced” lessons that require frequent student responses (2011, pp. 2-3). The significance of fast paced instruction is described in Engelmann and Carnine’s (1985) *Theory of Instruction* on which Direct Instruction programs are based. The frequency of student responses and pace of instruction are both elements that secure the active engagement of all students throughout the lesson.

Issues of nomenclature have impacted on studies measuring the efficacy of explicit instruction (Hughes, Morris, Therrien, & Benson, 2017). In their review of Engelmann’s Direct Instruction (2007), Liem and Martin (2013) investigated both the specific teaching program and the “specific explicit instructional practices underpinning the program (e.g. guided practice, worked examples)” that are elements of explicit instruction. Liem and Martin reported that both scripted and non-scripted teacher-directed methods are effective in maximising student achievement (2013, p. 368). Wheldall, Stephenson and Carter (2014) concur that over 40 years of research has demonstrated the efficacy of explicit/direct instruction methods including the specific DI programs. This finding is consistent with Hattie’s (2009) meta-analysis of 304 studies on direct instruction (non-scripted, explicit instruction) that reported an effect size of 0.59. Elements of explicit instruction report high effect sizes, for example, Feedback ($d = 0.73$) and Teacher Clarity ($d = 0.75$).

In the context of this study, teachers were coached to employ a combination of instructional strategies drawn from the work of Archer and Hughes (2011), Engelmann and Carnine (1982), Hollingsworth and Ybarra (2018) and Rosenshine (2012). These strategies were: daily review of previously learned material, clear statement of goals and expectations, fast pace with high rates of student engagement, fully guided practice with regular checking for understanding, step by step instructions drawn from task analysis, and adherence to a three step lesson structure: I do, we do, you do.

Review of Coaching Studies

Cornett and Knight (2009) note the dearth of rigorous research on the impact of coaching on those being coached and the students they teach. They attribute this deficiency to the variability of methods, the context in which coaching occurs and interpretations of the term ‘coaching’. However, when teachers are supported to implement particular evidence-based practices by coaching methods that include multiple observations, feedback and modelling, and when research designs include formal observations of teachers’ performance, the positive effects of coaching are apparent (Desimone & Pak, 2016; Kretlow & Bartholomew, 2010). While the research on the efficacy of coaching on the take-up of explicit

instruction approaches is limited, the studies that have attempted to map this process are useful to review.

Morgan, Menlove, Salzberg, and Hudson (1994) documented the effects of peer coaching on the ability of low performing pre-service teachers to correctly implement *Reading Mastery* (Engelmann & Bruner, 1983), a scripted commercial Direct Instruction program. Rather than observe teaching in situ, lessons were videotaped and viewed later by both the peer coach (another pre-service teachers with demonstrated capacity to implement *Reading Mastery*) and the pre-service teacher. This study is highly relevant because despite following a script, many of the instructional strategies that the pre-service teachers were able to demonstrate after a period of coaching are common to explicit instruction and included: effective use of hand, gesture or auditory signals; unison oral responding; correction techniques; provision of specific praise statements; and, a high rate of student responses, also known as pacing. Given a series of target behaviours to demonstrate, the authors reported that co-viewing of videoed lessons, modelling by the peer coach and opportunities for practice contributed significantly to changes in the pre-service teachers' alignment with the Direct Instruction model.

Kohler, McCullough Crilley, Shearer, and Good (1997) used multiple base-line single case design to analyse the effectiveness of three experimental conditions on teacher and student outcomes: baseline (alone), coaching phase (with expert peer coach) and maintenance phase (alone). During a day-long professional learning session the four participants learned about six elements of direct instruction described by Rosenshine (1983), which is an earlier iteration of elements in the instructional model we introduced in the present study (for example, guided student practice, continual feedback and independent practice). Kohler and colleagues developed a checklist to assess teachers' organisation and conduct of the direct instruction strategies that contains many of the same criteria we used in our study. While we allocated a numerical score for observed criteria, the authors tallied the number of instances they witnessed of a particular behaviour. In addition to observing teachers and providing verbal and written feedback between 21 and 24 times, Kohler et al. (1997) set aside time for seven formal coaching sessions for pairs of teachers that were facilitated by the expert coach that took up to 45 minutes. Kohler et al. report greater evidence of direct instruction strategies during the coaching phase but minimal take up of strategies not discussed with the coach.

De Jager, Reezigt, and Creemers (2002) also used direct instruction strategies to examine the effects of in-service training and coaching on teaching reading comprehension. The authors provided five three hour training sessions (15 hours) of professional learning on five of the six elements of direct instruction outlined by Kohler et al. (1997) and three individual coaching sessions with an expert at three monthly intervals. De Jager et al. (2002) reported significant differences between the control group and the five teachers who took up direct instruction strategies on the elements daily review, presentation of new content and guided practice, but conclude that the teachers did not succeed in implementing all aspects of the instructional model. The authors draw particular attention to three factors as barriers to implementation: the lack of intensity of the coaching provided, the length of the training, and the requirement that teachers only employ these strategies during the 16 scheduled reading comprehension lessons.

In a study on the effects of professional learning plus coaching on early years' teachers accurate delivery of a group instruction in mathematics, Kretlow, Wood, and Cooke (2011) trained three teachers to use a combination of direct instruction strategies for whole-class instruction. The authors chose three salient components of the Direct Instruction model: model-lead-test (also known as 'I do, We do, You do') to denote the structure of the lesson when introducing new concepts, systematic error correction and unison oral responding. Significantly, the teachers had experience delivering scripted Direct Instruction programs, such as *Reading Mastery* (Engelmann & Bruner, 1995). While all teachers improved their

delivery of instruction after the in-service and subsequent coaching, the teachers experienced difficulties with understanding the Direct Instruction model, generalising the instructional sequence model-lead-test to mathematics and making instructional decisions. The authors' conclusion, that "[t]he teachers may have perceived these not as specific, effective and transferable strategies but simply as part of a scripted program they used for reading" (Kretlow, Wood, & Cooke, 2011, p. 241), adds weight to the argument that explicit instruction is a complex approach to understand and finesse in the classroom.

What Models of Coaching are currently being used in Schools?

Coaching falls along a broad spectrum, from non-directive/collegial coaching that is responsive to teacher self-reflection and allows students' needs to guide the coaching process, to directive/expert coaching that is focused on assertively implementing particular practices (Ippolito, 2010). The most common model in Australia is the coach who works 'side-by-side' as a 'peer-coach', 'change agent' or 'thinking partner' to have 'structured conversations' that support teachers to be reflective and achieve their particular goals (Killion, 2009; Harrison & Killion, 2006; Reiss, 2003; van Nieuwerburgh & Passmore, 2012). The role of the GROWTH coach (Goals, Reality, Options, Will, Tactics and Habits) (<http://www.growthcoaching.com.au>) is underpinned by enablement; as van Nieuwerburgh (2013, p. 5) advises, "the skills needed to be a coach, you possess already: the ability to listen to others, to ask questions and to summarise".

The focus for non-directive/collegial coaches is on the process of effecting change. While this coaching procedure can adapt to any reform agenda, the supposition is that the individual being coached has the will, knowledge and the skills to change. Cavanagh (2006) regards 'client-centric approaches' such as GROWTH coaching, which assume that the solution is within the individual, as highly optimistic. Cavanagh notes that "[s]ometimes no matter how long we ask the solution does not emerge, because it is not in the client, nor are the raw materials available for it to emerge via the processing of questioning" (p. 337).

Instructional coaching is a new approach to professional development that many schools have embraced as a way to alter specific teacher behaviours and improve classroom instruction (Killion & Harrison, 2006; Knight, 2007). Instructional coaching evolved from the early work of Joyce and Showers in the evaluation of staff development (Showers, 1985; Showers & Joyce, 1996). A distinguishing feature of instructional coaches is that these experienced teachers have strong pedagogical knowledge and content expertise in the area they coach (Kowal & Steiner & 2007; Feger, Woleck, & Hickman, 2004). Instructional coaches work with teachers to help improve their practice by modelling instructional strategies, observing lessons in the teacher's classroom, co-teaching, co-planning lessons and providing feedback (Borman, Feger, & Kawami, 2006).

While instructional coaches are often used to support particular instructional initiatives these coaches are not supervisors. Instead, Knight (2009) argues these non-directive coaches "partner with teachers to help them incorporate research-based instructional practices into their teaching" (p. 18). When discussing pedagogy, it is the role of the coach to offer choices and ensure teachers' individual needs are being addressed. Knight (2009) advises that coaches should talk less than teachers and reach collaborative agreements, not persuade teachers to agree with them by imposing their ideas. The partnership approach between teacher and instructional coach is central to develop trust, authentic dialogue and respect for 'choice and voice' (Knight, 2009; Knight, 2016; Showers, 1985).

An advocate for instructional coaching, Knight advises that teachers cannot be expected to learn without opportunities to "watch model demonstration lessons, experience

job-embedded support and receive high-quality feedback” (2009b, p. 509). Knight’s (2007, 2009) model of instructional coaching is predicated on coaches as ‘equals’ rather than experts, who do not work with all teachers on staff, but rather those that choose to participate.

Hamre, LoCasale-Crouch, and Pianta (2008) highlight the critical role of formative feedback as an effective way of paving the way for change in teachers’ practice, knowledge and understandings:

...the use of observational formative assessments of classrooms to provide teachers with individualised, on-going, and collaborative feedback targeted explicitly on practices that we know make a difference to children’s development (p. 103).

In their review of the literature on instructional coaching, Borman, Feger, and Kawami (2006) noted that teachers generally resisted coaching when they felt threatened by the coach’s presence in their classroom. This was particularly noted by experienced teachers who suspected their performance was being evaluated under the pretense of coaching. Jones and Rainville (2014) sympathise with teachers who perceive coaching as “surveillance and punishment” (p. 272) and are reticent to take part. For Ertmer et al. (2003) a significant factor for teachers is the coach’s interpersonal skills or ‘bed-side’ manner that enables them to empathise, listen and build trusting relationships (Knight, 2009b). There is limited research on how teachers perceive instructional coaches who work in a directive, as opposed to reflective relationship with staff, so this question, along with questions about the efficacy of the coaching, was of particular interest to us.

To begin this investigation we conceptualized a directive coaching model that is different to other approaches and supports teachers to take up explicit instruction.

The Case Study Coaching Model: Hammond Coaching Model

Gallucci, Van Lare, Yoon and Boatright (2010, p. 922) describe the ‘delicate’ role of the instructional coach who juggles coaching with agendas of whole-school improvement. In the school where this case study is set, a decision had been made by the school leadership team to implement explicit instruction. Thus, the relationship between the coach and staff at the school was primarily that of an expert outsider: neither performance manager, evaluator nor school administrator.

For the purposes of this study, and after negotiating the model with the school administration team, we conceptualized the role of the instructional coach as being the job of a specialist who has distinct expertise in the discrete field in which they coach and strong interpersonal skills. Mindful that coaching violates traditional norms of teachers’ autonomy, privacy and equality (Hattie, 2009; Ippolito, 2010) and that those who seek to critique teachers’ practices “walk on sacred ground” (Knight, 2009b, p. 511), the expert coach in this study (the first author) aimed to use her expertise in explicit instruction and her capacity to build relationships to exert influence (Taylor, 2008).

Despite awareness of the need for respect and tact, we deliberately chose not to shy away from a directive approach. The school administration had established a reform-based agenda and teachers accepted the need to implement explicit instruction strategies to address students’ literacy and numeracy performance. We took the view that the level of challenge associated with taking up explicit instruction was sufficient to warrant structured support from an expert. Our role as practice-based researchers was to develop a model of coaching that would achieve this.

In line with Cavanagh’s (2006) views, and the philosophy of clear communication and specific feedback embraced by the explicit instruction approach itself, we wanted to ensure that teachers could benefit from the expert knowledge the external expert coach could

provide. We did not assume that teachers had that knowledge or expertise ‘inside them’. We took the perspective that it was beneficial to tell the participating teachers how they could improve and approached the coaching relationship with an expectation that they would attempt to implement the suggestions that the coaches provided.

In this study, we drew from two empirically supported coaching methods: ‘side-by-side’ or ‘in-vivo’ coaching (Blakely, 2001) and traditional ‘supervisory follow-up coaching’ (Gulamhussein; 2013; Joyce & Showers, 1996). For the majority of the sessions, the principal responsibility for coaching was taken by the first author, acting as an ‘external expert’ or specialist coach. Three members of the school staff, chosen from the administrative leadership, were also involved in in-class observations, recording observational data and discussing observed techniques with the specialist coach. For each coaching session, one of these additional coaches accompanied the expert coach, typically providing some confirmatory feedback to the teacher. The primary purpose of having an additional school based coach involved was to provide modelling of the coaching process to these school administration staff.

During each observed lesson, the coaches independently monitored instructional practices and recorded data which rated the extent to which the teachers demonstrated elements of explicit instruction. While the researchers in the Kohler et al (1997) study tallied the number of witnessed instances of a particular behaviour, the expert and admin coaches in this study allocated a numerical score for observed criteria. The data was collected for three purposes: to quantify changes in teaching practice as teachers advanced toward mastery, to develop the observational skills of the administrator coaches, and to triangulate data. This data was used by the coaches to compare and refine their observations; it was not provided to teachers. In addition to these ratings, the coaches recorded and provided specific, positive evaluative feedback to the teacher, highlighting strengths and the impact of particular strategies, while also including suggestions for improvement (Kretlow & Bartholomew, 2010). This feedback was provided in the form of a detailed written grid detailing the recommended strategies, observations, and suggestions.

To a lesser extent, the expert coach intervened directly during lessons; either to give specific feedback to the teacher or to demonstrate with the students. Working alongside teachers at the ‘point-of-need’ has been shown to improve the rate and accuracy of teachers’ take up of new teaching behaviours and can result in more sustained implementation than the supervisory follow-up method (Kretlow & Bartholomew, 2010). This kind of in-vivo coaching only occurred when requested by the teacher, or when the expert coach’s offer to demonstrate was accepted by the teacher.

Kohler et al. (1997) reported that when initial professional learning is followed up with supervisory expert coaching, teaching accuracy improves. Each observation session was followed by a meeting between the expert coach and the teacher. The administrator coaches were also in attendance. During these coaching conversations, teachers were invited to reflect on the lesson they had delivered. The expert coach reviewed and elaborated on selected points of feedback from the written notes taken during the observation, ensuring that the focus was on the positive aspects of the teacher’s performance, while also highlighting one or two specific areas that the teacher might choose to work on the next session. These suggestions always related directly to the instructional principles of explicit instruction outlined for the teachers. Thus this approach differed from commonly used coaching methods in that it was highly focused, evaluative and directive. The tone was designed to be both warm and positive, but the feedback was deliberately both specific and clear.

Method

Two kinds of data were analysed to address the research questions in this study: observational checklists with numerical data about use of the instructional principles of explicit instruction and interview transcripts from participants before and after they undertook the intensive coaching phase of the project.

All staff ($n = 40$) from one metropolitan primary school in Western Australia attended a total of 10 hours of professional learning spread over four after-school professional learning sessions and a six hour day of professional learning provided by the first author. This occurred prior to the formal coaching program that involved ten teachers. The professional learning included research about the efficacy of explicit instruction as well as an explanation of the stages and elements of the approach and multiple lesson demonstrations.

We were mindful of research that suggests that school administrators are more likely to “enhance instructional quality if they allocate their direct efforts with teachers into non-evaluative channels” (Hallinger, Heck, & Murphy, 2014, p. 24). A total of three administrators not including the principal were selected to be admin coaches and were matched to teachers they did not performance manage. As well as undertaking administrative work, all had at least eight years recent teaching experience ($M = 10.33$). Two were female and one was male.

All but one of the ten coached teachers was female; two were coached in their first year of teaching, the remainder had taught for five years prior to the project and two teachers were highly experienced with over 16 years in the primary classroom. We assigned each participant a pseudonym (please note, ‘Mandy’ was the pseudonym for the expert coach and is referred to in the results). The following table provides a summary of this information. Please note K denotes Kindergarten, a program for four year old children.

	Years of Experience	Year level taught
<i>Admin Coach</i>		
Kim	8	K-2
Jamie	8	K-2
Oliver	15	3-4
<i>Teacher</i>		
Jeanie	5	K-2
Daisy	9	K-2
Nadine	22	K-2
Penny	0	K-2
Bella	5	3-4
Chad	9	3-4
Freda	5	3-4
Hayley	9	3-4
Jonelle	16	5-6
Lisa	0	5-6

Table 1 Demographic information

A combination of inexperienced and experienced teachers across different year levels was selected with the intention of establishing a team of teachers who could demonstrate explicit instruction strategies and begin peer coaching of staff not presently involved in the coaching program. While the school administration team selected who would be coached, four teachers volunteered and requested participation in the first round, and their requests were accommodated. The remaining five teachers were coached in the second half of the year.

After the professional learning sessions, but prior to being observed and coached, the first cohort of staff were interviewed about their perceptions about coaching and being

coached. These staff were then interviewed after they had been observed and coached about their experience. This process was repeated for the second cohort of teachers.

During the observation and coaching phase, teachers were observed on five occasions two to three weeks apart. Teachers were allocated 40 minutes for literacy and or numeracy lessons that the expert and admin coach observed. During these observations, each coach scored the lesson based on the inclusion of elements of the explicit instruction model out of a total of 30 points. By scoring each element of the lesson, the two coaches could compare their observations to monitor accuracy and fidelity of feedback. Written feedback was also prepared. The feedback included observations of lesson content, teaching practice and student responses (e.g., ‘four worked examples’) evaluations of instructional practices (e.g., ‘good pacing’), and suggestions (e.g., ‘I might have used the mini-whiteboards more often to check for understanding’). To ensure the validity of observational data, neither numerical scores nor written feedback were shared between coaches until feedback sheets had been separately emailed to the second author.

After some discussion between the expert and admin coach to ensure that appropriate foci for the coaching session had been established, teachers were released from class to attend coaching sessions that lasted up to 30 minutes and were audio-recorded. Each coaching session was led by the expert coach who began by asking teachers to comment on their observed lesson. Using a framework detailing the stages and elements of an explicit instruction lesson that teachers were familiar with from the preparatory professional learning sessions, the expert coach elaborated on her written feedback. She set the tone with a positive evaluation of the teacher, the classroom environment or the lesson itself, then explained how the teacher had followed or deviated from the explicit instruction model, and described the effect of this on student engagement and learning. The administration coach was invited to provide additional insights or comments. Goals were set for the next observation and there was an opportunity to discuss the next lesson’s content. Teachers received detailed written feedback from the expert coach via email later the same day as well as a further offer of support in planning and reviewing lessons prior to the next observation. The expert coach also provided sample lessons on request.

Results

Research Questions

- 1) **What impact will coaching have on the practices of teachers learning the Explicit Instruction model?**
- a) **What changes in feedback and lesson implementation scores will be observed over the course of the five-session coaching program for individual teachers?**

We used the scores taken during observations of lessons to assess teachers’ ability to effectively use Explicit Instruction principles in their observed lessons. Analyses of the total explicit instruction performance scores assigned by both the instructional and the expert coach (Table 2) show that the mean lesson scores do not differ significantly either for individual teachers or by session. That is, the data obtained by the two coaches for each teacher was consistent overall, supporting the reliability of the observational tool and rating scale. The variable of interest here is whether there was any change in the teachers’ scores over the course of the coaching program. When session by session scores were compared, the data indicate that the teachers’ scores changed significantly over time. Figure 1 shows mean growth in scores over the five coaching sessions for each teacher.

	Mean Expert Coach Rating	Mean Instructional Coach Rating	Mean Difference	Standard Deviation	t (df=4)	Sig (2 tailed)
Bella	19.4	19.7	.3	3.90	-.17	.87
Chad	17.5	18.5	1.1	.94	-2.39	.08
Daisy*	6.8	6.8	.1	.71	.00	1.00
Freda	19.7	19.4	.3	1.52	.44	.68
Hayley	14.7	15.5	.8	1.56	-1.14	.32
Jeannie	26.5	26.2	.3	.98	0.69	.53
Jonelle	16.7	18.1	1.4	2.63	-1.19	.30
Lisa	26.8	26.7	.1	1.39	.16	.88
Nadine	20.2	18.4	1.8	4.31	.93	.40
Penny	22.0	21.6	.4	.96	.93	.40

Note: Daisy's scores relate only to the Daily-Review² (allocated 7 points) part of the lesson rather than the full lesson structure.

Table 2. Mean ratings for use of instructional principles of explicit instruction employed during lessons

A repeated measures analysis of variance was used to test the hypothesis that the teachers' ability to demonstrate the use of explicit instruction lesson components and principles would develop over the course of the coaching program. As indicated in Table 2, there were no significant differences between the scores of the expert and instructional coaches, nor any suggestion from inspection of the data plots that any differences between the two coaches' scores were related to either teacher or session number. The interpolation line in Figure 2 illustrates the mean overall growth in teacher scores over the course of the five observed lessons and associated coaching sessions. This demonstrates that, as a cohort, the teachers improved over the five sessions in their ability to use the instructional principles of explicit instruction in their teaching, and that this trend occurred regardless of who was observing them.

The main effect of session number was significant, with $F(4,36) = 26.85$, $p = .000$, and contrasts between sessions were also significant in all cases except for between sessions 3 and 4. That is, the mean lesson score for teachers continued to improve over the course of the coaching sessions, although the change between session 3 and session 4 was minimal. Note that Daisy's data was not included in this analysis as her scores were for Daily Review only (the agreed format for Kindergarten classes). There was no difference in mean scores between the Round 1 and the Round 2 teachers, with $t(7) = .21$, $p = .84$. That is, the same pattern of improvement occurred for both groups of teachers in line with predictions.

It is important to note that although the teachers' scores improved, the lack of a control group of teachers means that improvement in teaching ability might be attributable to factors beyond, or in addition to, the coaching process.

² Daisy's fast paced daily review of literacy precursor skills such as phonological awareness and letter-sound knowledge, took up to 25 mins. All other teachers presented a shorter daily review and a formal lesson.

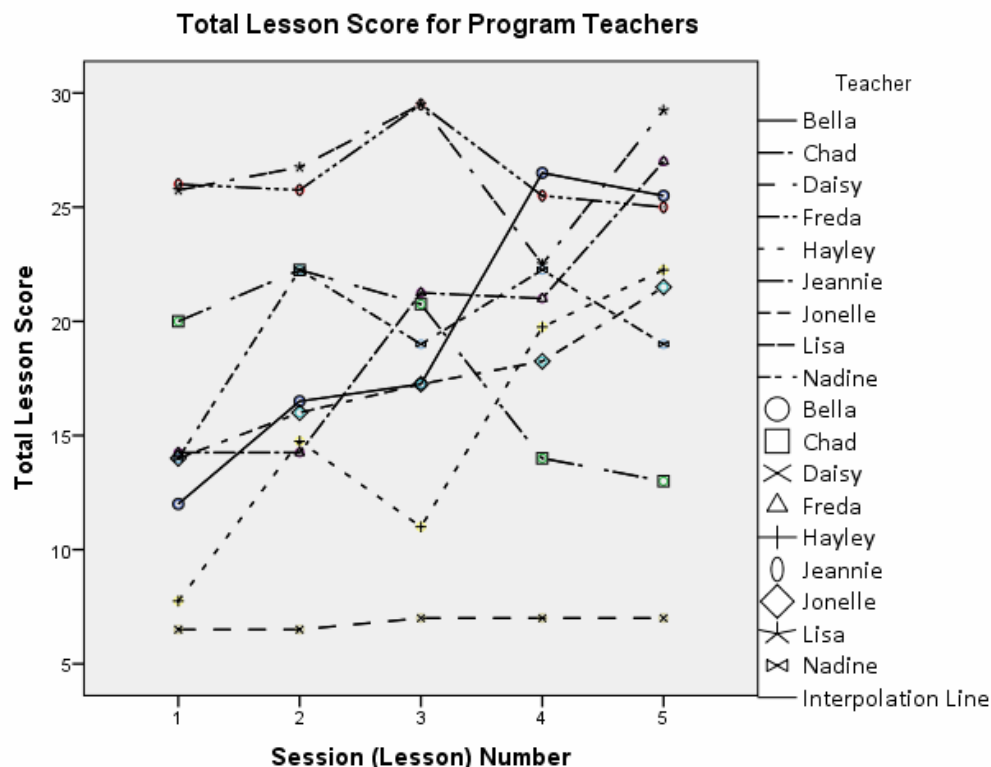


Figure 1. Mean coach ratings of adherence to the instructional principles of explicit instruction during observed lessons for individual teachers over the course of the five session coaching program

b) **How will teachers perceive the impact of the coaching program on their pedagogy?**

Teachers who participated in the coaching program were interviewed pre- and post-coaching about their perceptions of the impact of coaching on their teaching practice. Figure 2 shows the proportion of comments coded at ‘positive efficacy judgement’ increased in response participating in the coaching sessions. All participants comments were read and a smaller selection that were typical of most of the comments, and that best encapsulated and summarised the range of responses, follow:

Nadine, pre-program (negative):

I probably feel like it's more signing off on paperwork. So I feel like we do our goals and someone comes to watch it, and that's it....it's more about getting the paperwork in...

Nadine, post-program (positive)

It's been a great, yeah, it was ... it was daunting, but no, it's been a really good ... very good experience.

....So now with Mandy gone I will continue and continue to add on to what I've learnt from her, whereas probably last year more so, with the [previous model of] coaching, and this will sound bad, but I probably in some ways, because it was such a quick thing for one go and then that's marked off as done and you go onto something else.... I think I did revert back to my old ways in many cases.

Daisy, post-program (positive)

I think it's made my teaching practice better, particularly working with Mandy. She's provided me with suggestions of what I could do next to better it, to move the kids forward, and I think I've moved my children forward a lot rapidly than what I perhaps would have without that coaching so, you know, it's giving you that push..

Penny, pre-program (positive)

I think it will have a big ... a big impact on my teaching. I think it will be interesting to see ... to compare what Mandy thinks to Jamie or Kim or even to myself.

Penny, post-program (positive)

I think it's definitely improved my teaching.

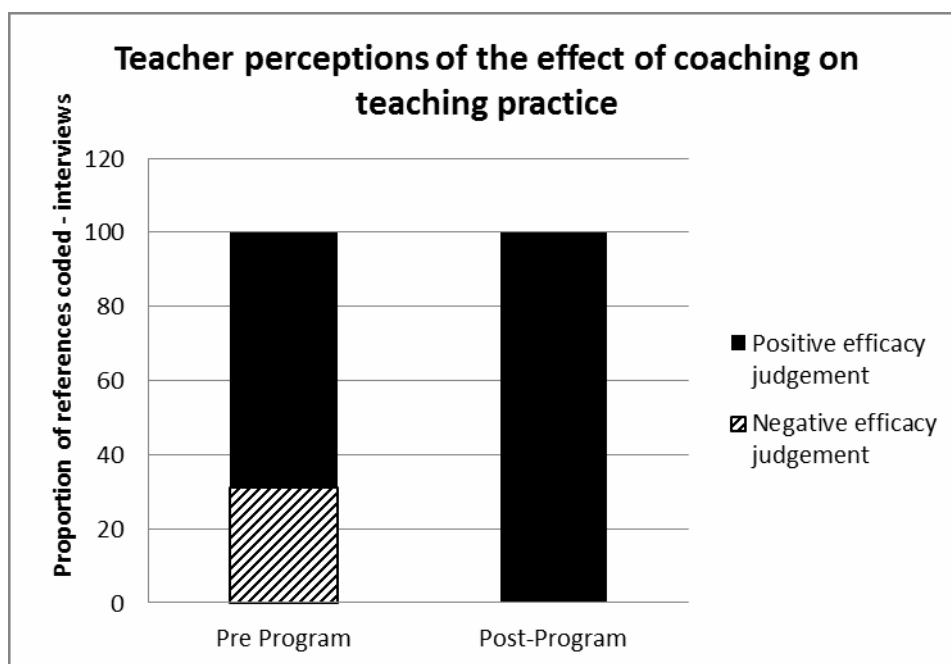


Figure 2. Pre and Post Analysis of the effect of coaching on teaching practice

c) **How will teachers perceive the impact of the coaching program on their students' learning?**

We asked teachers how they perceived the impact of being coached on their student's learning and Figure 3 shows the change in response that is illustrated by these comments:

Bella (pre-program, negative)

I think the student outcomes probably are improving....all I can say is that I do think as a school our outcomes are improving because we are doing the explicit instruction model but I don't know if it will be as a result of coaching. For me, I don't think it will be.

Bella (post-program, positive)

Yeah. I feel quite positive about what's happening. I'm think I'm seeing ... I ... am definitely seeing that children retain what I'm teaching a lot more....because of the feedback that Mandy gives me...like when she tells me that I am getting the students to answer in full sentences more...so I can see how what I do when I teach explicitly impacts on their learning.

Penny (post-program, positive)

As I said it's probably not something in all areas, but in literacy and maths where I was coached, definitely. Because I've just seen the kids' ability to recall information that I have taught a month ago is a lot better. They are not forgetting things. Yeah it's good.

- 2) **How will teachers feel about their participation in the process and will this change as the coaching program progresses?**
- a) **What will the impact of the coaching be on teachers' professional self-regard?**

It was important not only to consider whether the teachers felt that the coaching had changed their teaching, but also to address the long term impact of the program on teachers' personal wellbeing and perceptions about themselves as professionals. The teachers were asked to reflect on the emotional impact of the coaching, that is, on the impact of the coaching program on their own sense of their competence and confidence as teachers. The teachers' responses were coded as either positive/ neutral or negative and Figure 3 shows the positive shift in perception.

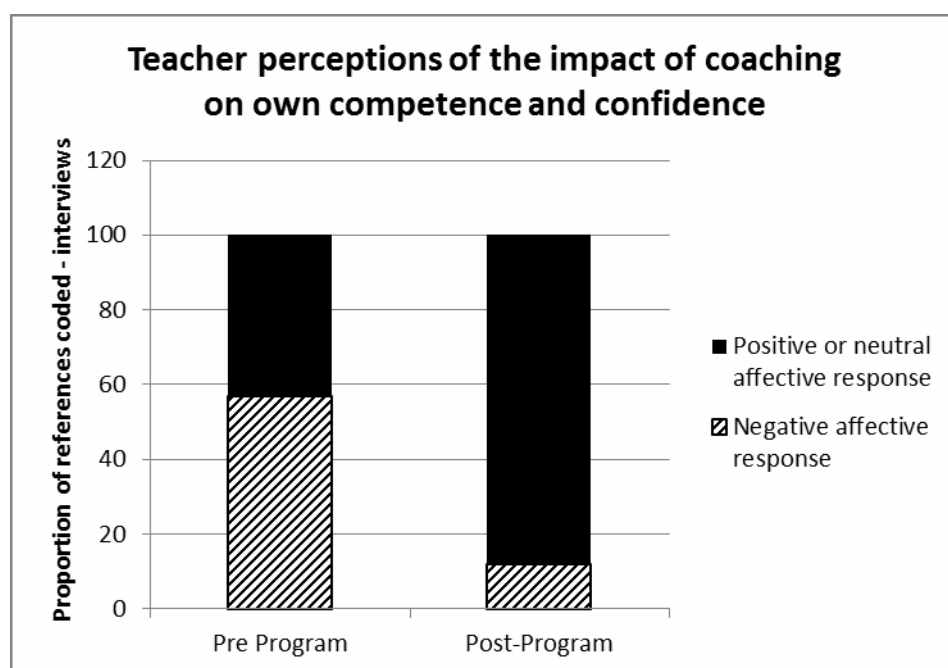


Figure 3. Pre and Post Analysis of impact of coaching on teachers' competence and confidence

Bella (pre-program, negative)

For me personally I don't like the....if I'm to be honest, I don't like the formal observations from admin. I find it...I get a lot of anxiety from it and I don't feel it improves my teaching at all. I lose a lot of motivation from it ...

Bella (post-program, positive)

Good actually. Mandy is so personable. She is very positive and lovely and gentle and you can't help but, you know, it's nice...I was quite upset when I spoke to you initially but I've, yeah, this has been quite positive experience. It still nervous but not nearly as, I would say, traumatic as ... as that had been for me before. I've not been upset at all.

Chad (post-program, positive)

It's been good, I am a better teacher now. I was saying that, I think before the whole process started I was a bit apprehensive about it. The idea of having, you know, it could be several

people in the class watching me, watching every move, a bit daunting, but I must say that Mandy has been really good. She's been, you know, positive and put me at ease so I've actually, I wouldn't say I've enjoyed it but it's as close to as that as I possibly can, you know ...

Jonelle (post-program, positive)

So I guess it's had a boost in my confidence and ... and also in my own ability to be able to do this now across more areas. So because maths was my focus and aspects of literacy and now I know, and it's a familiar structure now to me, so now I'm going, "Okay. Well, how do I apply this to this, or that's right, I need to remember this, this and this." So, yeah. I think it's ... it's made a difference. Yes.

3) What perceived benefits and drawbacks of the coaching process will teachers describe?

After taking part in the coaching program, teachers were asked to reflect on what they perceived were the benefits and drawbacks and a number of themes already reported were reiterated. By far the greatest drawback was the stress of being observed; however this was countered by comments about perceived improvements in teaching quality.

Hayley (post-program)

I have learnt a lot. It has been quite stressful being watched and at times I just wanted to throw my hands up and go, "You know what? I'm done." And ... but persevering with it, it has, you know, it's become easier and I've ... I've learnt more, which is always good and I'm not where I was ten weeks ago, which is awesome.

The quality of the feedback, in particular the coach's positive tone, detailed written feedback, directness, specificity and limited number of the suggestions was cited by most teachers as the main benefit of coaching:

Lisa (post-program)

I think the feedback itself was amazing...it was outstanding. It was beyond what we imagined and showed me exactly what I needed to do to be a better teacher.

Jeannie (post-program)

When Mandy gave me a small area each time to work on I found it really, really easy I suppose, to look that up, to go okay, 'how am I going to include that in my teaching?' Then she would watch my next lesson and Mandy would let me know, yeah, you've done that successfully, or maybe you might need to try this. Each time she came and watched I'd mastered the little skill that she wanted me to which was really good but I think that that was more like as I said before, because it was a small skill each time so it was easy for me to master that skill and get it prepared and continuing to focus on it, so I think that was more, for me, yeah, giving me that target, I could go and research and I could apply that, and yes, I think that professionally that really did help me...it took a little of the stress away I suppose.

Bella (post-program)

The feedback was very clear and achievable and because it was in table format I could go back and methodically alter whatever I needed to alter and I knew whereabouts, specifically, in the lesson I needed to alter something, I mean, and there was also a lot of positive feedback which helped to, I guess, bring my confidence back up because it was... had gotten really low and ... and that's not normal for me. And then she would then recognise that I'd put that into the following lesson and she'd make a

note, "I like the way that you ... I gave this recommendation and I can see that you ..." [the most] useful would be ... that there's only a few things that I have to concentrate on... Mandy gives suggestions on how ... how that would translate into ... into the next lesson and I can easily do that. So I've got direction of how to implement the feedback.

Daisy (post-program, positive)

I found the whole process quite positive and I think that's probably just due to the fact that I have received positive and specific feedback and I think perhaps if I hadn't it might have been more challenging, but I've been able to take on that feedback and also the suggestions on, "Next time I would like to see you do this," or, "You could take them further now and do this." So it's given me a clear goal.

Nadine (post-program positive)

Well, Mandy makes you think about what you're teaching and this is going to sound terrible, but..... Well, it is going to sound terrible, because for years I didn't really ... I knew what sort of basic things I needed to teach but I never thought about the steps to get to a certain point. Like, say, teaching writing, I would just get them to write without looking at the steps.... Also like Mandy just ... she showed me [how to do] something, so she mentioned in her feedback about, using hoops to step out a sentence, so she came in [to show me for] just five minutes, and little things like that made the world of difference.

But I'd definitely say I've ...the feedback has been so positive that there's never been a time that I've doubted myself.... The feedback has been such that I think, "Oh, that ... that's ... I can do that," because there's lots of feedback but it's not in a scary way, it's not something huge, it's just little steps. So just by changing one or two things it's actually made for a better lesson and then I've just been able to build on those skills. So, yeah, I feel really positive about it.

Discussion

Long lasting teacher change is elusive, rarely associated with “drive-by” in-service (Stein, Smith, & Silver, 1999) and most likely to be effective when it is connected to practice and accompanied by follow-up support that bridges newly learned information with classroom implementation (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009; Guskey & Yoon, 2009; Wood & McQuarrie, 1999). After ten hours of professional learning we incorporated a coaching component as a means of embedding the theory and practice about a model of explicit instruction (Archer & Hughes 2011; Engelmann & Carnine, 1982; Hollingsworth & Ybarra, 2018 & Rosenshine, 2012) with demonstrations of practice, regular observation and constructive verbal and written feedback. Given the limited empirical evidence on the efficacy of instructional coaching (Cornett & Knight, 2011) the results of this study clearly demonstrate a significant, positive and generally linear impact on teacher growth over five coaching sessions.

The relationship between improving teacher quality and student achievement is well established (e.g., Darling-Hammond, 2000) and the positive impact of our directive coaching model improved the alignment of teaching practices with a highly effective model of instruction (Liem & Martin, 2012). We take the view that the specificity of the instructional model teachers were asked to take up, the standardised feedback form, and the timing and organisation of the coaching process were significant factors in achieving measurable change in classroom practice. In contrast, the impact of coaching models that are predicated on individualisation (i.e., characterised by teachers’ choice of instructional strategies and variability in the number, duration and nature of coaching sessions or feedback), is limited

(Desimone & Pak, 2016). The low impact of these responsive approaches may disguise the potential of coaching.

Egalitarian coaches who are responsive to teachers' individual needs and specific goals are generally regarded as more effective in their attempts to win over teachers and form strong coach-teacher relationships through conversation, sustained engagement, and reflective analysis than directive coaches (Dozier, 2006). In this study, we employed an approach to coaching that was unapologetically directive and prescriptive (Borman et al., 2006). However, as the results indicate, teachers were, albeit initially apprehensive, willing to engage in coaching. Moreover, they demonstrated and reported significant changes in the implementation of target instructional strategies.

Participants' comments indicated that the warmth of the expert coach in this study was an important factor in building trust; however from the outset we were mindful that 'bed-side' manner alone would not alone bring about change. Instead, the expert coach exemplified the description of an instructional coach as the 'more knowledgeable other' Teemant, Wink, and Tyra's (2011, p. 687) who is able to collaborate, develop plans and provide data-rich feedback following an observation to support implementation of new practices. As well as having a thorough understanding of the instructional model, the expert coach in this study provided modelling, opportunities for practice and ongoing feedback.

These are aspects that Glover (2017, p. 14) reports change teachers' practice but are also associated with teachers' "positive perceptions of self-efficacy (confidence in performing tasks/skills)", as reported by the participants in this study.

Formative feedback was another essential component of the coaching model investigated here that we argue contributed to teachers' perceived confidence in their instructional practice. Both verbal and written feedback was provided and the expert coach paid particular attention to the tone of all communication. For example, improvements were

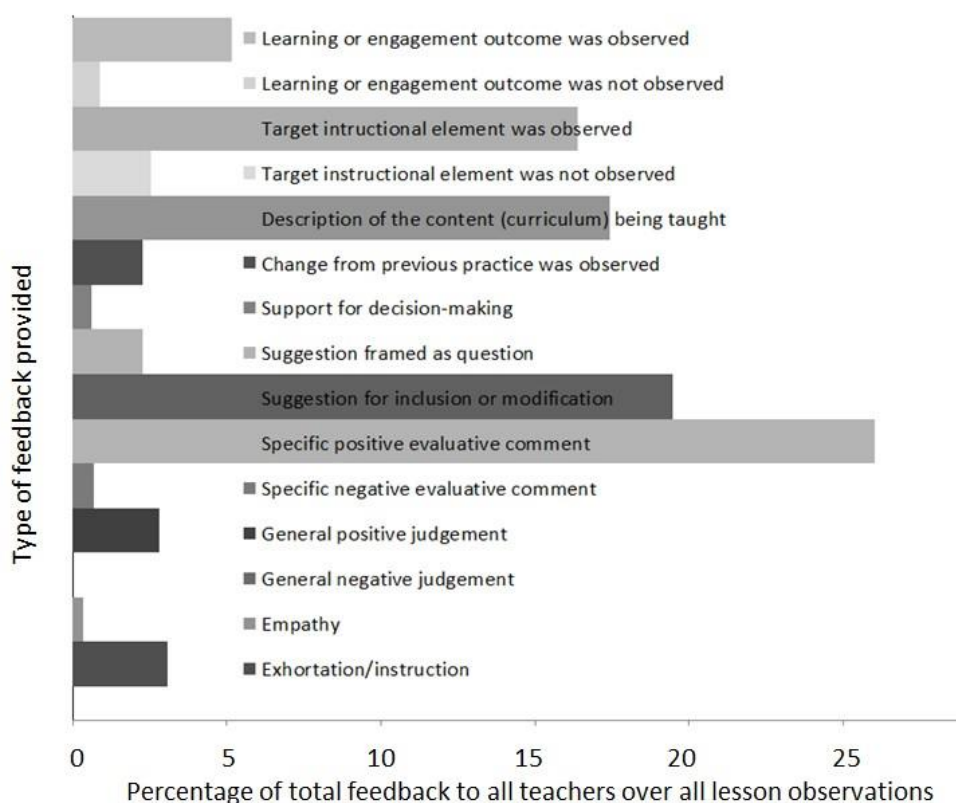


Figure 4. Written lesson feedback coded by type

suggested rather than directive in tone: ‘*I might do this next time*’ and ‘*you could use*’. Recommendations were also justified, in terms of ‘if you do this...the impact on instruction will be this...’ The comments of those coached acknowledges that detailed and well organised feedback that is direct, justified, specific and manageable for classroom teachers is a factor in changing practice. Figure 4 highlights this point. As feedback was an element in the efficacy judgements shown in Figure 2 it was possible to further code feedback in this category to establish the sub categories shown in Figure 4. While the feedback provided to teachers was specific and targeted, it was overwhelmingly positive and rarely didactic. The ‘supported decision making’ that typifies responsive approaches was minimal; rather, the clear directives were couched as specific suggestions or questions. As a result, teachers felt guided, supported, and affirmed.

Interestingly, when Devine et al. (2013, p. 1384) examined the impact of instructional coaching within educational settings they concluded that the effect on teacher development and ultimately positive student achievement was “promising”, but that instructional coaching was “complex to implement” because of school-based factors: system and school based stakeholders, school culture and principal and teacher uptake. It is significant that in this study we were not stymied by any of these influences, most likely because the school had prioritised student achievement and teachers had committed to changing their instructional practices in line with the explicit instruction model. This reform-based agenda for school improvement is typical of a growing number of schools, in Western Australia (Louden, 2015) as well as internationally, that are investing in instructional improvement through professional learning and coaching (e.g., Killion, 2009; Mangin & Dunsmore, 2015; Salavert, 2015; Shidler, 2009). Devine et al. (2013) also raised the need for extensive training for coaches and the cost of implementation as potential barriers. Put briefly, we used an apprenticeship model to support the development of the three instructional coaches who have continued in that role and the school paid less than one third of an average teacher’s salary for approximately 22 days of the first author’s time over one school year to conduct the project.

The model we designed concurred with Collet’s (2012) conceptualisation that coaching is “a change business...driven by the idea that someone needs someone else to change” (p. 28). We suggest that when there is an appetite in schools to improve student outcomes driven by a moral imperative to change teaching practices to achieve this, teachers respond positively to a prescribed coaching model. We presented the staff in this study with information about a proven instructional model (Hattie, 2012) and the onsite classroom support to implement it in their classrooms. It would appear that our coaching model addresses concerns raised by Hasbrouck and Denton (2009) who discuss the conflict between non-directive models of coaching and the legal and ethical responsibilities of teachers to provide students with the most effective instruction.

Next Steps for Advancing Research and Limitations

The research reported here is relevant to all who seek to change classroom teachers’ instructional practices through professional learning and coaching. We conducted this study in one metropolitan primary school and future research is necessary to replicate this on a larger scale with more teachers and different school settings. Additionally, while staff demonstrated take up of explicit instruction practices, whether staff have continued with these practices after the departure of the expert coach was outside the scope of this paper. We also acknowledge that the presence of administrators during observation and feedback sessions may have contributed to teachers’ preparedness to take up the explicit instruction model. While staff did not indicate this during interviews, we acknowledge the need to test the efficacy of the coaching model without the presence of administrative staff.

Conclusion

Over 20 years ago, Fullan (1993) observed that the “the hardest core to crack is the learning core—changes in instructional practices” (p. 49). Today, the impact of the instructional choices teachers make on student outcomes is far more visible (Hattie, 2009) and ‘what works’ is not in question, but rather ‘how’ to achieve high quality classroom practice (Dinham, 2016). It is undeniable that more rigorous accountability is required to establish instructional coaching as a value-added professional development strategy. However, results from initial research on the Hammond Coaching model are very promising with respect to aligning teacher practice with an explicit instruction model and developing teacher self-efficacy. Despite limited human and financial resources this model brought about measurable and significant change in instructional practice over the period of one school year.

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