Modeling and the Gradual Release of Responsibility: What Does It Look Like in the Classroom?

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Abstract

Recent professional development efforts in literacy have highlighted the role of the teacher as a model for students using direct instruction. Direct instruction is a lesson methodology taught to teacher candidates. We developed a schematic to represent the confluence of evidence found in the research and analysis of several lesson planning templates in order to create a visual representation of the elements of instruction that could be used to plan lessons. Previous research has demonstrated that modeling was not used frequently in classrooms. We were interested in determining if teachers were still using modeling infrequently. To investigate this, we identified three questions we would pursue through action research and mixed methods of analysis in local classrooms. These questions focused on determining the amount of time spent modeling in classrooms and the actions used after modeling to determine the extent these actions were reflected in the research literature. We found that teachers are using modeling much more frequently than was found to be the case in the previous study, but that the instructional actions following modeling are often inconsistent with research literature conceptions.

Key Words: direct instruction, modeling, gradual release of responsibility, models for teaching

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Brock Education, Volume 19, No. 2, Spring 2010, 65-77

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This study was designed to examine the relationship between theory and classroom practice in the use of modeling as an instructional strategy. Faculties of Education teach lesson planning to teacher candidates and typically teach candidates to plan both through direct instruction and through indirect approaches. Direct instruction would require modeling. Research and instructional theories (Rosenshine, 1997) identify instructional actions that should follow modeling.

Statement of Purpose

Prior research about direct instruction indicates that modeling is an aspect of direct instruction that should be followed by structured and scaffolded practice and a gradual release of responsibility to support increasingly independent practice. The purpose of this study was to determine if modeling, followed by structured and scaffolded practice and the gradual release of responsibility approach, was being used in classrooms and to examine the incidence of the use of modeling as an instructional methodology.

Literature Review

Modeling is a component of direct instruction. The terms direct instruction and explicit instruction are essentially synonymous in current usage. Between the late 1960s and 1998, Siegfried Engelmann and colleagues (Engelmann 1992; Engelmann, 1998; Engelmann & Carnine, 1991) developed the concept of direct instruction to describe intentional instructional intervention. The original direct instruction conception was developed with two guiding principles. The first was that children can learn if they are taught. The second was that all teachers can teach effectively if they have effective programs and instructional techniques. Engelmann's (1998) approach used program designs that promoted the careful analysis of program content to ensure: that big ideas were taught; that ideas were built on clear communication by the careful wording of instruction and use of examples; that used a scripted approach that identified what teachers should say and do and what they could expect from students' responses; that planned careful sequencing of the skills being taught; and that included a breakdown of the skills into activity sequences to teach over many lessons. The Engelmann (1998) approach to direct instruction promoted the organization of instruction using flexible skill groupings, the maximizing of instructional time to optimize the learner's focus, and the use of continuous assessment.

The Concept of Gradual Release of Responsibility Evolves

In 1990, and later in 1997, Barak Rosenshine elaborated a model for direct instruction that used many of the elements of the Engelmann approach, without the limitations of scripted lessons. Rosenshine also called his model direct instruction and developed a list of characteristics to implement this approach. In both the Engelmann and Rosenshine conceptions of direct instruction, once students have had modeling from the teacher, the students need opportunities

for guided practice, with support being removed gradually as students' independence in using the new learning increases. This is commonly referred to as the "gradual release of responsibility" (Wood, Bruner, & Ross, 1976; Pearson & Gallagher, 1983; Fisher & Frey, 2008).

It is clear from previous research that modeling is a major feature of direct instruction. It is equally clear that after modeling is completed, students need opportunities to work with new learning in a supportive learning environment and gradually have opportunities for increasing levels of independence. It is also clear, based on our analysis of lesson planning templates used in many pre-service teaching programs, that Faculties of Education try to teach this sequence of instructional actions to teacher candidates through lesson planning. Our experience with teaching lesson planning to teacher candidates promotes our belief that the linear nature of lesson planning templates makes it very challenging for these aspiring teachers to determine when they should model, when they should provide practice, how much practice is needed, and when they should start the "gradual release of responsibility".

To aid our teacher candidates with these decisions, we developed a pair of diagrams that we use to accompany the linear lesson planning template so that they can see the elements of instruction in relation to each other (Figures 1 and 2). The components of the diagrams are supported by the work of other researchers and authors (Collins, Brown, & Holum, 1991; Healey, 1987; Marchand-Martella, Martella & Ausdemore, 2005). Wood, Bruner & Ross (1976) referred to the gradual release of responsibility as scaffolding. The concept of gradual release of responsibility continued to be used by more recent researchers in the study of apprenticeship approaches (Collins, Brown & Holum, 1991). In 1983, Pearson and Gallagher developed an informative but awkward diagram to identify their conception of the gradual release of responsibility in direct instruction. The literacy text *Teaching the Language Arts: Engaging Literacy Practices* (Parr & Campbell, 2007) proposes a leveled continuum of support from modeling to student independence when referring to the gradual removal of the teacher's support to develop increasing independence with new learning. They identified the stages of the gradual release of responsibility after modeling as shared, interactive, guided, and independent practice. Figure 1 shows the stages of the lesson that uses direct instruction, including modeling.

The elements of gradual release of responsibility are shown graphically in the second schematic (Figure 2). These schematics have proven to be very promising instructional aides when used to explain instructional approaches and the gradual release of responsibility to teacher candidates designing their first lesson plans. Figure 2 provides expanded details of the characteristics of the gradual release of responsibility in terms of the teacher's instructional actions.

The efficacy of these diagrams in pre-service instruction about lesson planning led us to an interest in examining their potential for classroom teachers to self-monitor their practice, as well as for teacher supervisors (principals and superintendents) to use during teacher performance appraisal cycles. It is outside of the parameters of this paper to provide a detailed explanation of all parts of the instructional elements shown in Figure 2. However, this is the subject of a complementary conceptual paper (Authors, 2010).

For the purposes of this study, we have focused on examining the actual practice of the use of modeling in classrooms. In our schematic representation of the findings of prior research and the phases of instruction needed in a strong direct instruction lesson, modeling begins a sequence of teacher actions that guide students through supported practice toward increasing independence. The Durkin (1979) study revealed that modeling was only being used sparingly for instructional purposes. Of 4469 minutes of instructional time (the equivalent of

Figure 1

approximately three weeks of classroom time in Canadian classrooms), only twenty minutes was being used to model new learning. We hypothesized that modeling was probably more in evidence in today's classrooms because literacy modeling has been such a strong focus of teachers' professional development during the last fifteen years across Canada.

Method

Research Ethics approval was sought and acquired to work with teachers in one mid-northern Ontario school to examine the use of our schematic as an observation tool in the in-service

Figure 2

context. We requested opportunities to observe three teachers for five instructional days apiece in order to replicate the observation time of the 1979 Durkin study. Three teachers from among the whole school staff volunteered to be observed for five days over three weeks by two researchers. These teachers had to agree to this observation and to be somewhat unaware of what was being observed, understanding only that we were testing and developing a model. This was a necessary construct of the research because the teachers might have changed their practice if they had been fully aware of the focus of our observations.

Our focus questions for the classroom observations included:

1. How much time are teachers spending modeling?
2. What are they modeling?
3. How are they managing the gradual release of responsibility?

These questions would provide data that would help us determine changes in the role of direct instruction using modeling. Also we would be able to characterize the nature of teacher actions during the instructional phases (i.e., recapitulation, consolidation, application, metacognition) to support students' increasing independence with new learning following the use of modeling. The three questions guided the development of an observation chart used to record both qualitative and quantitative observations in the classrooms (Appendix 1). During observation, researchers

recorded anecdotal field notes in a chart headed by the three questions. The amount of time spent modeling was recorded in minutes then calculated as percentages of the school day to show the amount of time spent modeling in each instructional day. In our study, we noted start and stop times of modeling and later tabulated totals and calculated percentages based on the mandated 300 minute instructional day in the jurisdiction. All modeling over the five instructional days spent in each of the three classrooms was calculated as totals and percentages of total instructional time. Descriptive observations were recorded in narrative form in response to the second and third questions. Observations were then analyzed to determine trends and patterns and to form generalizations where applicable. Figures 1 and 2 became reference tools for creating this observation framework. Pre-observation meetings were held with each teacher to explain the visits that would be required and the observational role of researchers during the three weeks of time they would spend in the classrooms. A meeting with the school principal was held to explain, in confidence, the models we were using to guide our observations. Our research was welcomed because it was anticipated that it would provide data that would help clarify the school improvement goals and critical pathways being engaged in by the staff.

Action research approaches were used to observe teachers throughout a three week block of time. A third researcher assessed the transcribed observation data and coded emerging patterns. Following this, the three researchers worked together to examine and interpret the data and identify trends and patterns. During this study, we did not measure amounts of time nor strategies used for approaches to learning through indirect instruction. Although these are also very valuable approaches to learning, these approaches are outside of the scope of this research focus. Following the classroom observations, researchers met with the school principal and the staff to explain the findings. They were given copies of the model we had used to guide our observations (Figure 2). This workshop for the school staff supported their ongoing professional dialogue about improved conceptions of the gradual release of responsibility and the importance of modeling.

Analysis

Previous research (Durkin, 1979) had shown that modeling had not been a commonly used strategy in classrooms. Less than one half of one percent (.44%) of classroom time had been found to be spent on modeling. During our study, over thirty years later, we found that teachers had spent an average 20.4% of their classroom time modeling new learning for students. The amount of time spent modeling in each classroom, regardless of division, was similar, ranging from 18.5% to 22.5%.

In these classrooms, modeling was being used in a variety of subject areas in each of the three classrooms. Modeling was evident for the following activities: brainstorming using semantic webs; analyzing components of a magazine cover; adding and subtracting; filling out a chart; reviewing story elements; writing an invitation; reading and performing a play script; presenting routines for a presentation; deconstructing lyrics; creating a map legend; demonstrating text forms; demonstration of strategies for making meaning; and demonstrating a physical education game. Teachers modeled processes, products, or values. The incidence of modeling as an instructional approach was much more prevalent than in the 1979 Durkin study, which was restricted to the use of modeling in reading comprehension. In some lessons, the theorized sequence of levels of support was evidenced as displayed in the diagram (Figure 2). Many incidences of modeling were highly energized and supported with technology and visual

aids. Some modeling instances were proceduralized by virtue of the fact that they happened in consistent places in the classroom (e.g., on the carpet) or were associated with the use of specific classroom management routines (e.g., the use of flip charts to focus attention).

Although the modeling was observed as an intentional instructional practice, the instructional time following modeling was not always related to the modeling. Teachers appeared to be intentional and confident in the modeling phase of instruction, yet were sometimes inconsistent in relating the purpose of the modeling to the other phases of instruction. For example, we were able to observe the phases of instruction supported by the research literature as a teacher first modeled (making change with coins), then consolidated learning through scaffolded practice (students practiced making change in small groups), and then provided application practice (a simulation of purchasing items and making change with the coins). However, we were able to see variants from theoretical approaches with a situation where a teacher modeled the planning of a paragraph by showing the development of a thought/brainstorming web using a familiar visual aid, and then followed the modeling by having students use their own brainstorming web to plan and write a paragraph, although paragraph writing using a web plan had not been modeled. Figure 3 shows the degree to which teachers followed modeling with intentionally related consolidation and application (Figure 3 in Appendix 2: What Follows Modeling?).

Comparing the schematics that we had created with what we had observed in the classroom allowed us to determine how closely theory matched practice. Several conclusions were evident after analysis of the qualitative and quantitative data collected from our observations. Analysis showed that the majority of modeling was of process skills or specific products. Teachers used modeling to show students how to do something. The purpose of the modeling was often not explicitly stated, nor clear. Teachers did not consistently tell students that they would be responsible for using what was modeled in upcoming work. Not all modeling led to practice opportunities of what was modeled. Opportunities for students to practise often introduced new variables into the required work. This complicated students' efforts to practice what was modeled and often led to the need for one on one support as students applied new learning with unknown or un-modeled variables. Modeling was sometimes followed by practice opportunities that introduced new variables and complexities that might have been more effectively introduced at a later stage, when the skills were solidified by practice that replicated what was modeled. The decision about what was modeled often appeared to be influenced by the imminence of provincial testing rather than by formative assessment data from previous lessons. The rationale given to students for the need to practice often related to doing well on upcoming tests.

Some practice activities were directly connected to modeling yet often provided severely limited amounts of time before summative evaluation. Most of the work that students presented after first practice opportunities was evaluated through summative approaches. Summative assessment was often not preceded by formative comments to guide improvement. Formative assessment was given verbally. During practice, students often had verbal guidance from teachers about what they could improve. No written formative assessment was observed in any of the classrooms. Verbal formative assessment was often not specific enough to guide improvement and was frequently rushed by the support demands of other students. The conceptualized "gradual release of responsibility" was often not observed. Many aspects of the makeup of the classroom and tasks assigned by the teachers seemed to work counter to the

conception of the gradual development of independence. Practice time was severely limited in all contexts.

Teachers often followed modeling by regrouping small numbers of students to provide individual support to those who were anticipated to experience difficulties. This left the remainder of the students (usually more than three quarters of the class) with no scaffolded support during practice. Some frustration and off-task behaviour characterized students who needed support but were unable to get it immediately. While we did not measure the incidence of consolidation nor application support during indirect instruction in this study, our overall impression was that support for these elements was strong when applied to project based learning. This opens the window to examining indirect instruction in relation to the schematics at a later date. In each classroom the teachers had outstandingly positive relationships with their students. This appeared to have a beneficial effect on the degree and quality of engagement of the students during and following the modeling, regardless of the tasks.

Previous research, examination of lesson planning templates used in many Faculties of Education, and our personal experiences of teaching lesson planning to pre-service teachers have led us develop schematics (Figures 1 & 2) that relate theory to practice visually. Modeling is an important component of direct instruction. Previous researchers and theorists consistently identify the use of scaffolded support during practice following modeling. Scaffolded practice should follow and be supported by formative feedback to guide improvement and progress towards independence. This is the theory.

In practice in classrooms, modeling is being used much more frequently than was evident in prior research. However, the theorized roles of scaffolded practice, formative feedback, increasingly complex applications supported by further feedback, and summative evaluation that reflects adequate opportunities for successful demonstration of new learning is not being transferred to classroom contexts with consistency. We observed inconsistency of approaches related to modeling and the gradual release of responsibility. This has led us to conclude that, when using direct instruction, teachers have a strong conception of how to model effectively but unclear conceptions of the relationship between modeling and subsequent practice opportunities.

The school staff met with researchers after the study to discuss our research results. They were openly appreciative of the strength of the Figure 2 diagram to guide consistency in practice. One teacher said, "Now that I know what to do, I'll be able to do this better." It appears that provincial focus on improving teachers' use of modeling in the classroom has been successful but limited by the lack of a clear and comprehensive understanding of what should follow modeling. It is our hope that this diagram may be helpful with this aspect of teachers' understanding of direct instruction in both pre-service and in-service contexts.

Discussion

A clear conception of the role of modeling in direct instruction, and a visual perspective (Figure 2) of the grounded theoretical actions that should follow modeling have guided classroom observations of teachers' use of direct instruction in their classrooms. By comparing observed practice with the diagram in Figure 2, researchers were able to see and measure both qualitatively and quantitatively, the instructional actions that followed modeling. Using this aid to observation, we could see the limitations on the opportunities for students to consolidate and apply new learning. Teachers used modeling in direct instruction. Time spent modeling was relatively consistent across classrooms and the strategy itself seemed to be well received by

learners. However, the time following the modeling was often problematic in that teachers seemed to be without a clear conception of how to move students to independence through structured practice after the modeling.

We examined the potential of the schematics (Figures 1 & 2) for direct instructional elements to inform teachers' use of direct instruction and to guide the practice opportunities afforded by supported consolidation and increasing opportunities for independent application. Current use of this diagram with teacher candidates is helping them: conceptualize the phases of direct instruction, contrast direct and indirect approaches, and support their understanding of lesson planning. Professionals charged with the task of evaluating lesson delivery may also find it beneficial to use the diagram for professional development and to guide classroom observation. It has proven to be an effective framework to guide research reflections and the analysis of data.

Conclusions

Teachers are using modeling as an instructional approach more frequently than was found in the 1979 Durkin study. We observed that modeling was commonly used in direct instruction to help students develop targeted skills, products, and values. In discussions with teachers regarding the schematics (Figures 1 & 2), there is a common stated understanding that classroom modeling should be followed by scaffolded practice. Practice should then be followed by the gradual release of responsibility to the student and increasing independence with practice in new contexts. However, observations reveal that in actual implementation, teachers may be unclear about the nature of the practice that needs to follow the modeling and how they should support this practice.

An observation that should be cause for considerable concern also surfaced from this study. Providing supports to help some students caused others to be deprived of support. Our classrooms are not homogeneous environments. In a diverse environment, some students will require that new learning be re-taught before they can achieve success in any application of the learning. In response to this, teachers often work with students whom they anticipate will need re-teaching and who will benefit from strong scaffolding during early practice attempts. Immediately following the modeling to the whole class, they work one-on-one, or in small groups, with the students who need additional support. This is good proactive teaching. Problematic in the approach is the unsupported practice that is being engaged in by the rest of the students. They have no immediate supervision or error correction available, because the teacher is engaged elsewhere. Strong scaffolding for some means no scaffolding for others.

Additionally, the practice opportunities we observed frequently ended in a product that was being evaluated in a summative manner, with a grade or level assigned to it. The opportunity to practice in a supportive and formative assessment context was severely limited or absent in most observed lessons. We identified some gaps in practice, including: students being required to demonstrate learning that had not been practiced; summative evaluation that was not preceded by formative assessment; limited feedback to support error correction; assurances of firm and correct responses before evaluation was required; and limited applications within new contexts to solidify students' understanding. Modeling was often done in isolation and was not followed by any related practice opportunities.

There appears to be a significant gap between teachers' conceptual understanding of the role of modeling and their understanding of the role of structured, scaffolded practice, that is followed by a gradual release of responsibility after modeling. Although teachers may articulate

the sequential relationship among the phases of instruction, they do not consistently follow these phases in lessons.

Future Research

This study has uncovered new areas of inquiry related to the use of direct and indirect instructional approaches in the classroom. Future research will examine the amount of unsupported time that students attempt initial practice with new learning and examine whose efforts are scaffolded in the classroom from a demographic perspective. Additionally, opportunities to consider the nature and effectiveness of strategies that teachers are using to scaffold the majority of students while they support re-teaching to small groups should be considered in light of their frequency and efficacy. The strategies that motivate students to obtain support in a timely way when teachers are scaffolding other students would provide valuable information about what we can teach students about supporting their own growth. The nature of the formative feedback students receive during practice needs further study. The nature of the strategies that students may be taught about how to respond to formative feedback and address improvements (assessment as learning) requires further investigation. The proportion of formative to summative feedback that is being received by students would tell us a great deal about the sufficiency of practice opportunities with new tasks. Studying the range and complexity of the tasks that students engage in to ensure deeper understanding of new content would enrich our knowledge of the efficacy of indirect instructional approaches. Finally, the impact of teacher in-service on student learning should be thoroughly investigated. If teachers fully understand the instructional actions that might support and follow their strong modeling attempts, we could anticipate highly favourable correlations to improved student achievement.

An additional benefit of the schematics is that they display the role of indirect instruction in its many forms (inquiry, project-based learning, web quests, cooperative learning, trips, activity centers, problem solving, contract learning, and so forth) in relation to direct instruction. Examining the relationship in teachers' practice between the use of direct and indirect instructional approaches will be a valuable future study.

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APPENDIX 1

How much time was spent modeling?	What was being modeled?	What followed the modeling?

APPENDIX 2

ELEMENTS OF FIGURE 2 REFLECTED IN CLASSROOM OBSERVATIONS

STAGE OF SUPPORT (gradual release)	#	PHASE OF INSTRUCTION as identified in diagram	DESCRIPTION of segment as found in diagram	FREQUENCY/CONSISTENCY of what was observed in study as INTENTIONAL practice		
				(^) Areas needing more attention	*Areas of greatest need	
				consistently	sometimes	not evident
I do	1.1	Motivation	Remotivate through high levels of task success (from previous lessons)		(^) purpose of lesson not often identified	
	2.1	(Re)modeling	Transmission to whole class or groups		sometimes weak link to application	
			Intense cavitational interaction between teacher and students		positive relationships have an influence on degree and quality of interaction	
	3.1	Structured consolidation	High engagement		(unsure of factors affecting this)	
We do	3.2		Ensured 'first try' success through support		Interacting with teacher provides support for some	
	3.3		Initiate gradual release of responsibility for learning		(^) sometimes observed but not usually as an intentional progression	
	3.4		Continual monitoring for formative redirection			
	3.5		Error corrections in context			
	3.6		Provide formative assessment feedback			
	3.7		Shifts in context, application, level of content; from familiar to new, to problem embedded	*Time not allocated for students to experience a variety of practice opportunities		
	4.1	Application	Firm responding (by students)		evident in strong participants, not all	
	4.2		Strongly supported through scaffolding		(^) many without support	
	4.3		Moderately supported through scaffolding	*Missing step- students expected to assume responsibility shortly after initial supported efforts		
You do	4.4		Independence; begin collection of summative assessment data	*Many not set up for successful independent work, through lack of practice/feedback; nature of assessment rarely made explicit		
	4.5		Mastery; collect data from summative assessment task(s)	*Data usually collected for summative purposes without formative stage experienced		
Meta-cognition	5.1	Lesson conclusion		(^) Often without metacognitive aspect		