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Mentoring beginning primary teachers for exemplary teaching practices[☆]

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Abstract

In exploring the potential for mentoring to support novice teachers' use of effective teaching practices, we conducted a grounded theory analysis about change potential. Themes emerging from cross-case analysis of survey, interview, and observation data from six beginning primary teachers in the US and their mentors revealed factors, other than type of mentoring programme, that related to beginning teachers' success in improving classroom practices. More effective beginning teachers' mentors had more experience as mentors and were more effective teachers than other mentors. More effective beginning teachers communicated more with mentors, more accurately self-reported use of effective teaching practices, and were more open to mentoring.

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Keywords: Mentors; Beginning teacher induction; Teacher effectiveness

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1. Introduction

Teachers face many challenges during the first years of teaching, such as planning and implementing curriculum and instruction, conducting assessments, motivating students, managing student differences and behaviour, and feeling overwhelmed (Roehrig, Pressley, & Talotta, 2002; Veenman, 1984). In the current climate of the US that focuses on teachers' responsibility for students' achievement, beginning teachers must become "effective" quickly. With the pressure to have their students excel, while managing the high demands of classroom teaching, beginning teachers may be doubly stressed.

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A popular approach, intended to reduce the challenges that new teachers face and to improve the quality of their teaching, is to provide support via mentoring. Mentoring can include providing beginning teachers with access to more experienced teachers who act as sounding boards, guides, and counsellors (Fideler & Haselkorn, 1999; Henke, Chen, Geis, & Knepper, 2000). In general, mentoring programmes have several goals, including improving teaching performance, increasing retention of promising beginning teachers, promoting personal and professional well-being, satisfying mandated requirements related to induction and certification, and transmitting the culture of the school system (Huling-Austin, 1988).

Throughout the world, mentored induction programmes for new teachers are being implemented and studied, with mentors and mentees from Swedish (e.g., Lindgren, 2005), Palestinian (e.g., Kanan & Baker, 2002), Israeli (e.g., Lazovsky & Reichenberg, 2006; Orland-Barak & Yinon, 2005), South Korean (e.g., Cho & Kwon, 2002), and English (e.g., Harrison, Lawson, & Wortley, 2005) schools. Increasingly, beginning teachers are being required to participate in mentoring programmes, often as part of the process for permanent certification. In the US, about one half of beginning teachers in public schools and almost one third in private schools participate in formal induction programmes during their first year (Henke et al., 2000). Over the last two decades, approximately one third of all US states have mandated that beginning teachers participate in induction programmes that are implemented by school districts and follow state guidelines. Despite their proliferation, however, the effectiveness of such mentoring programmes is not certain.

From a survey of schools conducted shortly after one US state had mandated the use of teacher induction programmes, mentoring programmes did not appear to live up to the ideals that the mandate was supposed to inspire (Bradley & Gordon, 1994). Only 70% of the state's school districts had workshops that brought interns and mentors together before the start of the school year. Only 75% of the state's school districts reported that mentors observed their interns' classroom teaching, and only 85% of interns observed their mentors' teaching. Despite the mandates, many new teachers missed out on valuable opportunities.

In addition, many of "these state initiatives are not sufficient to guide the development of a comprehensive evaluation or professional develop-

ment plan since they do not include the additional behaviors pertinent to experienced teachers" (Covino & Iwanicki, 1996, p. 325). To date, much of the research has focused on the cognitive and affective benefits of mentoring programmes for beginning teachers. Mentoring has been credited as being very beneficial to both mentee and mentor teachers, though these benefits have been predominantly identified through interviews or written evaluations of participants in mentoring programmes (Ganser, 1991; Gray & Gray, 1985; Harris, 1995; Huffman & Leak, 1986; Hulick & Malone, 1988; Kennedy, 1991; Looney, 1997; Powell & Mills, 1994). While important functions of a mentor, as rated by beginning teachers in one study, included emotional and coping support, instructional and curricular support were considered even more important (Driscoll, Peterson, & Kauchak, 1985).

Though extremely crucial, it is not clear how to provide effective instructional support for beginning teachers, above and beyond emotional support. Mere access to a mentor does not ensure that mentees became better teachers. Mentors have been found to not always be effective teachers themselves, and even if they are effective teachers, they are not necessarily qualified to teach teachers. However, mentors are more effective when they are released from full-time teaching and receive training (Kennedy, 1991).

In interviews, interns report positive instructional changes, but no classroom observations of mentees or interviews with mentors were conducted to support these claims of instructional benefits (Thomas & Newton, 2001). Teacher satisfaction is "not enough" for researchers investigating the benefits of professional development (Bean & Swan, 2002), and it should not be the only basis for identifying the benefits of mentoring. One of the biggest shortcomings in the mentoring literature is the lack of observations of teachers to ascertain mentoring's effects on changes in actual classroom behaviour and the successive changes in their students' behaviour and achievement. Furthermore, that emotional "support represents the dominant orientation and focus of most induction programs" (Feiman-Nemser, 2000, p. 26) could prevent mentors from helping teachers develop as professionals and improve their practice as they learn to teach (Feiman-Nemser, 2000, p. 26):

Unless we take new teachers seriously as learners and frame induction around a vision of good

teaching and compelling standards for student learning, we will end up with induction programs that reduce stress and address immediate problems without promoting teacher development and improving the quality of teaching and learning. (Feiman-Nemser, 2000, p. 26)

The primary purpose of the current study was to generate hypotheses related to the potential for beginning teachers to change their classroom practices while being mentored. A secondary goal of this study was to explore the potential for improving the quality of beginning teachers' classroom practices when highly effective teachers (Allington & Johnston, 2002; Pressley, Allington, Wharton-McDonald, Block, & Morrow, 2001) served as mentors in a supplemental mentoring programme. An overview of the literature on effective mentoring and effective teaching, which informed our data collection and analyses, is presented next.

1.1. The nature of effective mentoring

There are many types of professional supports for young teachers that likely are not equally effective. Joyce and Showers (1980) hypothesised that, "...to be most effective, training should include theory, demonstration, practice, feedback, and classroom application" (p. 379), with coaching or mentoring of teaching strategies likely to increase the productive use of those strategies (1981, 1982). Consistent with this appraisal, the National Reading Panel (2000) found that the professional development interventions that were most extensive and supportive also were most successful in improving observed teacher practices (e.g., Dickinson, Miller, & Anastasopoulos, 2001; Duffy et al., 1986; Miller & Ellsworth, 1985; Perry & Van-deKamp, 2000). For example, Miller and Ellsworth (1985) implemented an intensive, two-year professional development treatment, including four college courses for improving reading instruction that covered assessment, differentiating instruction, using diverse instructional materials, planning Directed Reading Activities, story discussion techniques, and increasing student reading interests. The treatment teachers demonstrated higher implementation levels of all the trained behaviours than control teachers, and some of their attitudes toward reading were significantly higher than control teachers. In comparison, Stevens and Driscoll (1986–1987) were less success-

ful in helping teachers make observable improvements to their teaching practices. Their professional development training involved intensive seminars on effective teaching research and receiving feedback from observations, but it only lasted two weeks. Based on observations, some teachers made changes more easily than others, but there was no significant difference between the treatment and control teachers.

The nature of mentor preparation or quality should also be considered. Mentor training most often follows the model of knowledge transmission (e.g., Evertson & Smithey, 2000; Stallion & Zimpher, 1991; Wang & Odell, 2002). Such transmission entails training mentors in the knowledge and skills they should have rather than relying on mentors' existing knowledge or ability. This model is frequently used and easily implemented in mentored induction programmes. In contrast, developing expertise, in this case as a teacher or a mentor, requires the process of becoming a reflective practitioner. Schön (1990) argued that the education of professionals should focus on developing the professionals' ability for reflection-in-action to help them tackle complex problems they encounter in practice. Professional development should give beginning teachers, and their mentors, constructive opportunities to practice reflecting on their own teaching and that of others, as opposed to following a more traditional transmission model. To optimally foster students' engagement and achievement, however, it also may be important to clarify what effective teaching practices look like.

1.2. The nature of effective teaching

As mentored induction programmes seek to increase beginning teachers' usage of effective teaching practices, it is vital to establish precisely what those effective practices are. The findings of process-product research, in which observers kept track of specific teaching behaviours and then correlated those with student achievement test scores, are consistent. Teachers with high achieving students emphasise academic instruction, have expectations that students will master the curriculum, keep transitions short wasting little time, match instruction to students' needs, link curriculum to things familiar and relevant to students' lives, are clear and enthusiastic in the delivery of instruction, and use wait time effectively (Brophy & Good, 1986). Some of these teaching processes were

manipulated in true experiments that investigated subsequent student performance (e.g., Anderson, Evertson, & Brophy, 1979; Program on Teaching Effectiveness, 1978). Such work demonstrates that these teaching behaviours have positive impacts on students and are at least somewhat modifiable.

These earlier findings also are in line with contemporary qualitative studies about the teaching practices of highly engaging and achievement-producing elementary teachers (i.e., exemplary teachers; e.g., Allington & Johnston, 2002; Morrow, Tracey, Woo, & Pressley, 1999; Pressley, Allington et al., 2001; Wharton-McDonald, Pressley, & Hampston, 1998). Exemplary teachers were observed to teach many skills, match “task demands to student competencies, with demands increasing as students improved,” monitor student efforts, scaffold students as needed, encourage students to be self-regulated in their work, and make many cross-curricular connexions (Pressley, Wharton-McDonald et al., 2001, p. 80). They were exceptional classroom managers: such teachers established and explained routines and procedures and emphasised student self-regulation, with disciplinary actions rarely observed. They motivated students more than less engaging, less effective teachers by creating comfortable, stimulating, cooperative, and effort-focused atmospheres. Exemplary teachers did more interesting, authentic activities while they taught strategies and scaffolded students. These teachers also had higher expectations for their students’ learning and carefully monitored their students’ understanding more than did less engaging, less effective teachers (Bogner, Raphael, & Pressley, 2002; Dolezal, Welsh, Pressley, & Vincent, 2003). Moreover, exemplary teachers never used tactics that might undermine student motivation whereas less engaging, less effective teachers often did so (e.g., using punishment).

Such teaching behaviours can be described as proximal to students and student outcomes. That is, teachers’ attitudes, beliefs, and knowledge impact teachers’ behaviours, with teachers’ behaviours then impacting students’ engagement and learning. Teachers’ instructional practices have been found to have strong direct effects on students’ achievement, more so than more distal teacher characteristics like teacher beliefs and knowledge, which are not necessarily translated into practice (Muijs & Reynolds, 2002). Thus, the evaluations of the effectiveness of teachers in the current study primarily focused on teachers’ observed practices

rather than their cognitions. It is the specific types of behaviours described above that we planned to track in beginning teachers.

1.3. Research goals

The professional development of six beginning primary teachers was followed longitudinally over one school year. All beginning teachers received mentoring from school-provided mentors, while only three beginning teachers received additional mentoring from exemplary-teacher mentors (i.e., mentors who were effective teachers and emphasised the type of teaching used by effective teachers) in a unique researcher-provided induction programme. The primary goal was to identify factors that might influence the beginning teachers’ ability or willingness to implement more effective teaching practices.

2. Method

A multiple-case-study design was used in which both quantitative and qualitative data were collected and analysed using open and a priori coding. A cross-case analysis of the case studies was conducted to identify the key similarities and differences across the cases (Stake, 2000).

2.1. Participants

Two kindergarten teachers (Ms. Nickles and Ms. Lindsey; all names are pseudonyms), two grade-one teachers (Ms. Jackson and Ms. Thomas), and two grade-two teachers (Ms. Lockmaster and Ms. Smith) were identified as beginning teachers by their school principals and agreed to take part in the study. They taught at six different private elementary schools in a small, Midwestern US city. Five of the elementary schools were Catholic schools, and one elementary school was a Christian school. For four of the six schools, student SES data were reported to the Department of Education and were available in the form of percentage of students receiving free or reduced-price lunches. These percentages ranged from 1% in Ms. Jackson’s school to 72% in Ms. Smith’s school (Indiana Department of Education, 2003).

Five of the teachers were in their first year working as full-time teachers. Ms. Smith was teaching grade-two for the first time, but she had previously taught grade-one for a year and a half. Three participants—Ms. Nickles, Ms. Smith, and

Ms. Lockmaster—had some experience as substitute teachers, ranging from one half to seven years. All participants had bachelor's degrees in teacher education, except for Ms. Lockmaster who had taken some undergraduate coursework related to teaching. Each of their classes had between 8 and 20 students. A summary of the demographic information for each beginning teacher is provided in Table 1.

2.2. Mentoring contexts

Within each grade-level pair of beginning teachers, one teacher was randomly assigned to receive only a school-provided mentor, while the other was assigned to receive an additional researcher-provided mentor and participate in the supplemental researcher-provided programme. Despite the goal of hypothesis generating rather than hypothesis testing, random assignment was used because a secondary research goal was to examine the *potential* for the researcher-provided alternative induction model to benefit beginning teacher practices. We were not interested in examining the issues associated with making mentor–mentee matches, and we also did not want to prejudicially select beginning teachers for placement in the supplemental mentoring programme, either by choosing the novice at each grade level that we

thought might interact best with the effective-teacher mentor or by allowing the participants to choose the treatment of their preference.

Three beginning teachers had one school-provided mentor each, with both Ms. Lindsey and Ms. Thomas required to participate with their mentors in the traditional state mandated induction programme. Ms. Lockmaster worked at an unaccredited school and the mentoring assignment was more informal, as induction and teacher licensure were not required. The other three beginning teachers had two mentors each, one school-provided mentor and one researcher-provided mentor, with both Ms. Nickles and Ms. Jackson required to participate with their school-provided mentors in the state mandated induction programme. As a second-year teacher, Ms. Smith was already licensed, though this was her first time teaching grade-two; as she had participated in the state mandated induction programme previously, her current school-provided mentoring assignment was more informal. All teachers with researcher-provided mentors participated in the researcher-provided alternative induction programme.

2.2.1. School-provided mentoring

The six school-provided mentors were selected and assigned by the principal to each of the beginning teachers. In each case, these mentors

Table 1
Beginning teacher demographic information

Teacher	Grade taught	Teaching experience	BA in teacher education	Participated in researcher-provided	SES ^a	Number of students in class
Ms. Nickles	Optional full-day K	1st yr as teacher of record (.5 yr as sub)	Yes	Yes	2%	9 half-day 15 full-day
Ms. Lindsey	Half-day K	1st yr as teacher of record	Yes	No	6%	13 morning 8 afternoon
Ms. Jackson	1	1st yr as teacher of record	Yes	Yes	1%	20
Ms. Thomas	1	1st yr as teacher of record	Yes	No	N/A	15
Ms. Lockmaster	2	1st yr as teacher of record (7 yr as sub)	No	No	N/A	16
Ms. Smith	2	1st yr as grade-2 teacher of record (1 yr as sub, 1.5 yr as grade-1 teacher of record)	Yes	Yes	72%	10

Note. All names are pseudonyms.

^aSES represented by the percentage of students in the school receiving free or reduced priced lunch that school year (Indiana Department of Education, 2003).

were teachers in the same school. The mentors taught the same grade level as their beginning teacher mentee if the school had more than one class at each grade level. The school-provided mentoring programme entailed beginning teachers attending five formal support meetings over the course of the school year as part of the system-wide mentoring programme. Each formal group meeting included approximately 35 beginning teachers from across the city, and meetings typically lasted an hour or less. The school-provided mentors were required to attend only one of these support meetings with their mentees. These support meetings were designed for an audience of beginning teachers spanning grades K-12, with little differentiation or grade-level specific support provided. The meetings mostly involved lectures and videotapes about pedagogical techniques (e.g., from Harry Wong's *The Effective Teacher* series), with brief discussions and assignments connected to the topics of the videos.

The required assignments included a short essay on school identity, a report on parent-teacher conferences, teaching a lesson with observation and feedback from a mentor, and designing a lesson plan based on a template that focused on student learning outcomes and assessment. The assignments were required for state documentation that mentoring was being provided. School-provided mentors conducted few observations of their beginning teacher mentees, though the handbook had written guidelines calling for a minimum of four observations accompanied by pre- and post-conferences distributed over the school year. Those observations that occurred were usually very brief (i.e., 10 min or less). Mentor observations conducted by beginning teachers did not occur in this programme.

2.2.2. Researcher-provided mentoring

In addition to having a school-provided mentor, three beginning teachers were provided supplemental mentors by the researchers. The three mentors in the researcher-provided supplemental mentoring programme had been identified by the researchers as effective elementary teachers. They were hand selected by the researchers to be mentors because they were effective teachers. In fact, two of the mentors (Ms. Smally and Ms. Naples) were identified as very effective and one of the mentors (Ms. Riley) was identified as effective in the Bohn, Roehrig, and Pressley (2004) study.

The supplemental mentors did not work in the same schools as their mentee teachers, but in all

cases they did teach at the same grade level. Their mentor-training included a 2 hr session with the first author to discuss their responsibilities as mentors, including possible mentoring activities and ways the mentors might observe and coach their mentees. Additionally, they were provided a list of the characteristics of effective teachers (covered in AIMS, see Section 2.3.1) with an emphasis that these characteristics be developed in the beginning teachers.

There were eight 2 hr mentor support meetings over the course of the year. Each of these small group meetings included the researcher-provided mentors and their mentees as well as the first author of the study, who served as a facilitator. Each meeting included discussions about how to become a more effective teacher, with a specific teaching competency (e.g., classroom management, reading instruction, establishing a motivating classroom, managing individual differences between students) targeted at each individual meeting, placed in the context of teaching grades K-2. At these meetings, the beginning teachers self-assessed their teaching with respect to the focal teaching competency by rating how well they used effective practices in their classrooms (i.e., going through each classroom management item on the AIMS instrument). Next each beginning teacher had "air time" to speak about their reflections, with mentors and beginning teachers responding to their comments (for more information on this professional development format see Perry & VandeKamp, 2000; Perry, Walton, & Calder, 1999).

In addition to the meetings, each supplemental mentor observed her beginning teacher mentee for at least 2 half-days, once in the first half of the year and once in the second half of the year, and each beginning teacher observed her mentor for at least 2 half-days as well. The principals of the supplemental mentors were funded to hire substitute teachers to cover when mentors and beginning teachers chose to leave their buildings for observations. Mentors and beginning teachers received guidance and input about what to look for when they observed each other's classrooms. Specifically, they were provided with a list of what to look for as they observed their mentors that focused on the behaviours and characteristics of effective teaching as specified on the AIMS instrument.

In the researcher-provided mentoring programme, mentees and mentors were stimulated to reflect on their own teaching using self-evaluation

surveys, and mentees reflected on the teaching of their mentors. The mentors and beginning teachers all discussed their practices and rationales at group meetings and were encouraged to do so during and following classroom observations of one another. Teachers also received additional mentoring that included observation of skilled teaching by a mentor, reflection on the mentor's teaching that was observed, as well as reflection with the mentor about her own teaching. As these interactions occurred, the mentor teacher was urged to keep foremost in her consciousness the elements of effective teaching observed in research.

2.3. Data collection

Several types of qualitative and quantitative data were collected. At multiple time points over the course of the school year, the beginning teachers were observed teaching, surveyed, interviewed, and observed participating in mentoring/induction meetings. Mentors also were observed teaching, interviewed, and observed participating in mentoring meetings. In addition, mentoring logs were collected when available. Each of these data sources is described next.

2.3.1. Classroom observations

Each participating beginning teacher was observed during the first or second week of school in late August or early September, at mid-year, and again during the last month of the school year (i.e., in May). In both the fall and spring, two observers (i.e., always the first author, usually the second author, and sometimes a trained research assistant who was blind to mentoring treatment assignment) visited each classroom 2–4 times, with each visit lasting 1–2 hr. In order to appraise the quality of the mentor teachers' classroom practices, each mentor teacher also was observed by the first and second author 2–4 times over the course of a month early in the school year for 1–2 hr per observation. The observers were as unobtrusive as possible, typically sitting in the back of the room taking field notes that summarised instructional activities, content covered, student–teacher communications, and the organisation of the classroom. As suggested by Strauss and Corbin (1998), the classrooms were visited until no new conclusions could be drawn about each teacher's practices from the observations.

Classroom observation data of teaching practices were coded using the categories of practices outlined in the Classroom AIMS Instrument (Roehrig, Dolezal, Mohan-Welsh, Bohn, & Pressley, 2003; Roehrig et al., 2002). This instrument includes descriptions of the practices that are characteristic of exemplary teaching behaviours in the categories of classroom Atmosphere, Instruction/content, Management, and Student engagement. The Classroom AIMS Instrument was developed using the effective teaching literature (Pressley et al., 2003). The categories of Atmosphere, Instruction/content, and Management practices have subscales, which are described in Table 2.

Roehrig et al. (2003) conducted a validation of the AIMS instrument. Initially, multiple experts in elementary teaching (i.e., both academic experts and elementary teachers known to be very effective) supported the face validity of the four categories, 17 subcategories, and 130 items included in the instrument. The AIMS instrument also had acceptable internal validity. Cronbach's α s were calculated for each of the main categories and subcategories and alphas ranged from .45 to .96, with only three of the smallest subcategories scoring below .60 (α s above .60 were considered acceptable;

Table 2
Subscales of effective teaching captured in AIMS

Scale	Subscales
Atmosphere	Foster a sense of community Make learning interesting Encourage students to believe they can achieve if they expend effort Provide students with choices and create in them a sense of personal control Communicate that learning is valuable Project high expectations of students Provide informative feedback
Instruction/ content	Provide engaging, instructive content and activities Provide a high density of instruction Provide appropriately challenging instruction and assignments Make cross-curricular connections Scaffold student learning Teach and model effective thinking processes Encourage academic self-regulation (i.e., figuring out how to do tasks independently) Monitor academic activities/progress
Management	Encourage behavioral self-regulation (i.e., behaving well without external supervision) Monitor student behavior and task progress

Nunnally, 1978). The Student engagement scale was correlated significantly and positively with the quality of all three categories of teachers' classroom practices (i.e., Atmosphere, Instruction/content, Management), which supported the predictive validity of the AIMS instrument.

The teachers were rated with respect to each of the items on the AIMS instrument, based on the field notes. Each item specifies a practice consistent with effective teaching or a characteristic of effective teachers, and the rater determines the extent to which the practice described in the item is representative of the teacher's observed practice. For example, an item on the Atmosphere scale (Interest Fostered subscale) is "Teacher encourages curiosity/suspense—getting students excited about what they are learning/doing (e.g., 'Listen carefully to the story. You'll find out the answers to our questions.' 'Tomorrow, we are going to have a special mystery visitor.')." An item on the Instruction/content scale (Academic Monitoring subscale) is "Teacher walks around the room and continuously monitors students as they are working in order to check their understanding." An item on the Management scale (Behavioural Self-Regulation Encouraged subscale) is "Teacher communicates importance of routines and responsibilities." An item on the Student Engagement scale is "At least 80% of students are consistently on task and highly engaged in class activities."

Each item is rated on a one to three scale, with 1 = "rarely observed," not typical of this teacher's teaching; 2 = "observed occasionally"; and 3 = "observed often", very typical of this teacher's teaching. Collapsing over items, mean values from 1.0 to 3.0 can be calculated for the four major scales and for each of the subscales within the major scales. The final ratings that a teacher receives on each item (describing a classroom behaviour) within a category are averaged to create subscale scores for Atmosphere, Instruction/content, Management and Student engagement.

In the current study, two observers completed the AIMS instrument for each participating teacher, once for the mentors and once in the fall and once in the spring for beginning teachers. The two observers independently rated each teacher. The two primary observers (i.e., the first and second authors) reached almost perfect agreement, disagreeing by no more than 1 point for 95% of the AIMS items. The two raters reviewed and discussed any differences in light of their notes, until they reached consensus on ratings for 100% of the items.

2.3.2. *Use of effective practices survey*

Data were collected at the end of the school year on the six beginning teachers' beliefs about how well each used the teaching practices from the Classroom AIMS Instrument (0 = "Not sure," 1 = "Need to work on more," 2 = "Just need to refine," and 3 = "Very successful"). Additionally, throughout the mentoring programme, the beginning teachers in the supplemental mentoring condition completed portions of the Use of Practices Survey as reflection exercises. For example, when the topic of classroom management was discussed, beginning teachers took 10 min at the start of the group-mentoring meeting to evaluate their own use of each of the management practices in AIMS. They rated each practice on the scale described above. The goal was to help them focus on specific practices related to the day's topic that they needed to improve.

2.3.3. *Mentoring helpfulness survey*

Data were collected at the end of the school year on the six beginning teachers' beliefs about the quality of the help they received from each of their mentors (i.e., both researcher- and school-provided). They rated the quality of the help related to each of the areas of classroom practice covered by the AIMS instrument. For example, they would rate whether the mentor was able to help them with providing appropriately challenging content along the following scale: 0 = "Not sure," 1 = "Not helpful," 2 = "Somewhat helpful," or 3 = "Very helpful."

2.3.4. *Teacher interviews*

At both the beginning and the end of the year, the first author conducted semi-structured, open-ended interviews with beginning teachers. The interviews tapped the challenges and successes they experienced in teaching and mentoring. Consistent with qualitative interviewing procedures, probe questions were asked to obtain elaborations of ideas expressed in answers and to pursue directions suggested in the respondents' answers. Interview questions included the following: What did you think/expect/fear would be your biggest challenges before you started teaching this year? What turned out to be your biggest challenge this year? What turned out to be your biggest success this year? What do you think you were able to change/improve the most this year? What were the sources of your changes? How often did you interact with your [researcher-provided/

school-provided] mentor? What kinds of things did you discuss with her or get help with?

At the end of the year, all of the mentors also were interviewed about the mentoring experience using the same procedure. Interview questions included the following: What did you think were your mentee's biggest challenges this year? What if any improvements/changes were you able to discern from your interactions with her or her comments/attitudes? What aspects/activities of the [researcher-provided/school-provided] mentoring programme do you think had the biggest impact on your mentee? What have you learned about mentoring as a result of the [researcher-provided/school-provided] mentoring programme?

2.3.5. Mentoring observations and artifacts

The first author was a participant observer (Spradley, 1980) at all of the mentor–mentee group meetings in the researcher-provided programme, organising and directing the meetings as well as making notes about how those meetings proceeded, especially attending to the topics discussed, concerns raised by the participants, and suggestions offered by both the mentors and beginning teachers. She also attended the traditional school-provided meetings for beginning teachers as an unobtrusive observer, noting the activities and topics at these meetings. The observer was especially attentive to verbal and non-verbal indications of the beginning teachers' participation in these meetings. The materials distributed to beginning teachers at school-provided meetings also were collected. In

addition, the three researcher-provided mentors were asked to maintain log books of their contacts with their beginning teacher mentees, including the date and information about the activities they did together (e.g., observations, phone calls, etc.) and the topics they covered. Four of the six school-provided mentors also were required by the district to log their interactions with the beginning teachers, and beginning teachers turned in completed assignments.

2.4. Data analysis

2.4.1. Coding

The classroom observation AIMS scores were interpreted using the means and standard deviations obtained from the validation sample of 20 teachers. See Table 3 for a summary of the cut-off scores for each category and their interpretations. For example, the mean rating for typical/inconsistent use of effective teaching practices related to classroom instruction on the entire validation sample was $M = 1.9$, $SD = .38$. Ratings more than one standard deviation below the mean (1.5) are interpreted as the relatively rare/absent use of effective instruction practices, and ratings greater than 1 standard deviation above the mean (2.3) are interpreted as the relatively consistent use of effective instruction practices.

Beginning teachers' ratings on the self-reported Use of Effective Practices survey items were averaged to create mean scores representing the beginning teachers' beliefs about how well they

Table 3
Summary of AIMS cut-off scores and their interpretations

	Classroom atmosphere	Classroom instruction	Classroom management	Student engagement	Interpretation
Mean score	1.9	1.9	2.2	2.3	Typical
SD	.40	.38	.41	.44	(Indicative of the majority of classrooms observed = practices observed in effective classrooms were inconsistently used/observed)
Low cutoff	1.5	1.5	1.8	1.9	Poor (More than 1 SD below the mean = practices observed in effective classrooms were rarely or never used/observed)
High cutoff	2.3	2.3	2.6	2.7	Effective (More than 1 SD above the mean = practices observed in effective classrooms were consistently used/observed)

could use the effective practices represented by the AIMS scales in their own classrooms. A higher mean score indicated a higher degree of confidence in one's ability. Similarly, their ratings on the items of the mentoring helpfulness survey, which reflect each of the AIMS scales, were averaged to create mean scores representing the beginning teachers' beliefs about their mentors' helpfulness. A higher mean score was interpreted as a higher degree of mentor helpfulness.

Grounded theory analysis (Strauss & Corbin, 1998) was used for open coding of the interview data to generate categories or themes that emerged from their responses. Their responses primarily were used as a point of triangulation with other sources of data and to provide quotes exemplifying the patterns found in the cross-case analysis described below. In addition, the AIMS categories (i.e., Atmosphere, Instruction/content, and Management) were used to code the mentoring logs for interactions about effective teaching practices, with those that did not fit into the a priori AIMS categories (e.g., school procedures, dealing with parents, personal life/social support, etc.) coded as "Other." The number of interactions related to each of the categories was then counted.

2.4.2. Multi-case-study analysis

Case studies of each beginning teacher's mentoring induction programme participation and change in classroom practices over the school year were built from the data collected. A cross-case analysis then was conducted to identify key similarities and differences across the cases (Stake, 2000). Beginning teachers initially were sorted by mentoring programme and then ranked by their level of observed use of effective classroom practices (AIMS scores), in fall versus spring, to examine their other data for patterns. One piece of this data included fall to spring change scores in the observed use of practices. In addition, beginning teachers' self-reported mean scores on the Use of Effective Practices survey were compared to observed AIMS scores to create scores indicative of whether they under or overestimated their ability in relation to the classroom observation data. Mentor teachers also were ranked based on their own teaching effectiveness, and the data associated with the mentors and beginning teachers were again examined for patterns and theoretical relations with the mentors' helpfulness, the beginning teachers' levels

of effectiveness based on AIMS scores, and the content and number of mentoring interactions.

3. Results

3.1. Preliminary analysis

The first analysis explored the descriptive amount of change, based on the AIMS instrument, of the beginning teachers who had only a school-provided mentor and those who participated in the supplemental mentor programme and had a researcher-provided effective-teacher mentor in addition to a school-provided mentor. Preliminary examination of the beginning teachers' and mentors' data in relation to whether or not they participated in the supplemental researcher-provided mentoring programme revealed a lack of patterns related to beginning teachers' use of effective classroom practices. Both groups of beginning teachers declined in their use of effective teaching practices over the course of the year, with slightly greater average declines in the practices of teachers who received mentoring from only school-provided mentors (see Table 4).

3.2. Primary analysis

Possible reasons for the lack of differential impact of participating in the supplemental mentoring programme (versus not) were revealed through the analysis that grouped beginning teachers into two categories of *more effective teachers* and *less effective teachers*. These categories were based on their average AIMS scores at the end of the school year (see Table 4). Three teachers (Jackson, Thomas, and Nickles) had higher AIMS scores than the other teachers at the end of the school year, and are referred to here as the more effective beginning teachers. The other three teachers (Lockmaster, Smith, and Lindsey) received the lowest AIMS scores at the end of the year. These three teachers did not start the year as the weakest three teachers, but they ended it that way: they were not the least effective in terms of AIMS scores in the fall but were in the spring. The results that follow describe the differences between the more and less effective beginning teachers related to mentoring that emerged from the case studies, including the amount and content of mentoring interactions, the amount of mentoring experience their mentors possessed, the effectiveness of their mentors' own

Table 4
Beginning teachers' mean AIMS scores and change in observed use of effective teaching practice by mentoring programme

Mentee	Fall AIMS score	Spring AIMS score	Change in AIMS score
Nickles			
Mean	1.80	1.95	.15
SD	.16	.25	.34
Jackson			
Mean	2.13	2.03	-.10
SD	.17	.17	.16
Smith			
Mean	1.95	1.65	-.30
SD	.13	.29	.22
All mentees in researcher-provided supplemental mentoring programme			
Mean	1.96	1.88	-.08
SD	.20	.28	.30
Lindsey			
Mean	2.15	1.65	-.50
SD	.31	.13	.42
Thomas			
Mean	1.98	1.98	.00
SD	.10	.26	.22
Lockmaster			
Mean	1.73	1.73	.00
SD	.46	.30	.36
All mentees in school-provided mentoring programmes only			
Mean	1.95	1.78	-.17
SD	.35	.26	.40

Note. AIMS scores represent the mean ratings (collapsing across AIMS categories) of the frequency with which effective teaching practices were observed in the classroom (1 = rarely, 2 = somewhat/inconsistently, and 3 = often/consistently).

classroom teaching, as well as the beginning teachers' metacognitive awareness and openness to mentoring.

3.2.1. Mentoring interactions

One possible reason for some of the beginning teachers being more effective at the end of the school year is that they spent more time with their mentors and also received higher quality mentoring. Data analysis supported this suggestion. The mentors' log data indicated that the more effective beginning teachers spent more time with their mentors than the less effective beginning teachers. In particular, the more effective beginning teachers had more logged communications with their mentors, especially

about topics of instruction and management issues, compared to the less effective teachers. Overall, mentors logged more communications with the better beginning teachers, with about twice as many communications about instruction and management logged by the mentors of these more effective teachers than by the mentors of the less effective beginning teachers (see Table 5). The mentors' log data were supported by the interview analysis of beginning teachers and mentors. For example, the less effective teacher Ms. Lockmaster and her mentor reported that they found it difficult to find time to meet even though they taught in the same school, and their regular after school meetings dwindled and stopped as the year went on.

3.2.2. Experienced teacher-mentors

Another possible reason for the development of the more effective beginning teachers was that they had mentors who felt more comfortable in the mentor role. That is, their mentors had more previous experience as mentors. Data analysis revealed that the mentors of the more effective teachers tended to have more experience as mentors, while the less effective teachers' mentors tended to have little to no previous experience as mentors (see Table 6). On average, the mentors of the more effective beginning teachers had 2.8 (SD = 2.05)

Table 5
Average number of logged communications with mentor by topic

Topic of communication	With more effective beginning teachers	With less effective beginning teachers
Atmosphere		
Mean	.67	2.00
SD	1.15	.87
Instruction		
Mean	33.33	13.55
SD	24.17	2.21
Management		
Mean	16.00	8.11
SD	9.54	.10
Other^a		
Mean	36.00	34.67
SD	21.66	2.02
Total		
Mean	21.50	14.58
SD	20.75	12.91

^aIncluded topics related to school procedures, dealing with parents, personal life/social support, etc.

Table 6
Mentor teacher demographic information

Mentor	Mentee	Mentoring programme	In same school as mentee	Grade taught	Years teaching experience	Previous years as mentor	Quality of classroom atmosphere	Quality of classroom instruction	Quality of classroom management
Ms. Charles	Nickles (more effective)	School-provided	Yes	K	25	3	1.5	1.5	1.7 ^a
Ms. Smally	Nickles (more effective)	Researcher-provided	No	K	8	1	2.7 ^b	2.4 ^b	2.8 ^b
Ms. Jones	Thomas (more effective)	School-provided	Yes	3	9	6	1.6	1.8	2.4
Ms. Christopher	Jackson (more effective)	School-provided	Yes	1	21	3	2.1	2.4 ^b	2.5
Ms. Naples	Jackson (more effective)	Researcher-provided	No	1	13	1	2.8 ^b	2.7 ^b	2.9 ^b
Ms. Marlow	Lindsey (less effective)	School-provided	Yes	2	26	0	2.0	2.2	2.4
Ms. Jenson	Smith (less effective)	School-provided	Yes	1	2	0	2.7 ^b	2.5 ^b	2.6
Ms. Riley	Smith (less effective)	Researcher-provided	No	2	7	0	2.1	2.0	2.8 ^b
Ms. Crandy	Lockmaster (less effective)	School-provided	Yes	2	4	1	1.2	1.4 ^a	2.0

Note. Quality ratings of teaching practices were based on the distribution of ratings from the validation sample. See Table 3 for summary of the cutoff scores used to identify ranges.

^aRating falls below the typical range, indicating rare/absent use of effective teaching practices.

^bRating falls above the typical range, indicating consistent use of effective teaching practices.

years of previous experience as mentors, while the mentors of the less effective teachers had only .3 (SD = .50) years of previous experience as mentors.

While all the mentors received little formal training on mentoring before becoming mentors, the researcher-provided mentors received continuous support in their mentoring during the course of the year. Two of the three researcher-provided mentors had beginning teacher mentees that were more effective. Ms. Riley, the researcher-provided mentor of a less effective beginning teacher, reported in her final interview that she needed more training. She explained, "I'm not very good at giving [feedback]—saying 'this is a problem and [you] need to work on it.' I'm too easy—I need to learn how to [give feedback] in a nice, kind way." Ms. Riley also revealed some of the difficulties of being a new mentor. Ms. Riley stated, "I wasn't sure what I could tell her to help her. You can't force someone to change.... Maybe if I'd had more professional development as a mentor—to learn how to suggest changes—[it] would have helped me."

3.2.3. *Effective-teacher mentors*

Another difference between the mentors of the more effective beginning teachers and the less effective beginning teachers was that the instructional practices of the successful mentors were more consistent with effective teaching. Field notes, collected by multiple observers during multiple classroom observations, were rated using the AIMS instrument. This was done to evaluate the consistency with which the mentors used teaching practices identified as effective in producing student engagement and literacy achievement by Pressley and his colleagues (e.g., Pressley, Allington et al., 2001). We compared the AIMS scores of the mentors of the less effective versus more effective beginning teachers. Across the three areas of practice, the mentors of the more effective beginning teachers had scores that were above the typical range almost half of the time (47%). In contrast, the mentors of the less effective beginning teachers scored above the typical range only 25% of the time across the three areas of practice (see Table 6).

Having mentors with more effective practices should be an advantage to beginning teachers, especially when beginning teachers observed mentors' teaching. For example, the more effective teacher, Ms. Nickles, talked in her final interview about how her level of expectations for students

increased because of her interactions with her researcher-provided mentor. When she started, she said she did not know what kindergarteners could or would do, but she learned much from her researcher-provided mentor (one of the most effective teachers). Ms. Nickles observed her mentor's classroom and talked to her in order to figure out how and where to set her expectations. She found out that her mentor's students could write sentences and decided to try it with her own students. Her researcher-provided mentor also observed and reported this positive change. Furthermore, Ms. Nickles' perceptions of the helpfulness of the support she received from both her researcher- and school-provided mentors on the effective teaching practices outlined in AIMS aligned well with the researchers' evaluations of the quality of the mentors' own teaching practices. Ms. Nickles rated her researcher-provided mentoring with Ms. Smally to be more helpful (between 2 "somewhat helpful" and closer to 3 "very helpful," $M = 2.8$, $SD = .15$) than her school-provided mentoring with Ms. Charles (just under 2 or only "somewhat helpful," $M = 1.8$, $SD = .16$), who was observed by the researchers to less consistently use the effective teaching practices outlined in AIMS than Ms. Smally (see Table 6). In contrast, the mentor of one of the less effective beginning teachers, like her mentee Ms. Lockmaster, was an ineffective beginning teacher who had no teaching degree. Her mentor reported at the end of the school year, "I never had any opportunity to observe [Ms. Lockmaster]. I don't know anything about her teaching." Thus, the quality of the support and the appropriateness of the suggestions Ms. Lockmaster received from her mentor were questionable.

3.2.4. *Metacognitive awareness*

Focusing specifically on the beginning teachers themselves, the more effective beginning teachers had more accurate self-reflections or metacognitive awareness of their strengths and challenges related to using effective classroom practices than the less effective teachers. In contrast, the analysis between beginning teachers' self-assessment ratings and researcher-observed ratings indicated that the less effective beginning teachers tended to believe they were doing better than they actually were.

Although all six beginning teachers tended to overestimate their ability to use effective teaching practices (e.g., they gave themselves higher ratings on the AIMS instrument compared to the researchers'

observation ratings), the less effective beginning teachers' self-reported use of practices ratings were consistently much higher than the researchers' AIMS ratings based on classroom observations (see Table 7). On average, the amount of inflation of instruction for the more effective beginning teachers was only .3, while it was .7 for the less effective teachers. Ms. Nickles, Ms. Jackson, and Ms. Thomas (the more effective beginning teachers) were consistently most accurate in their self-reported use of effective classroom instruction, the area in which these more effective beginning teachers also demonstrated consistent improvement and effectiveness (see Table 7). In addition, the level of self-inflation was descriptively higher on average in all areas of practice for the less effective beginning teachers as compared to the more effective beginning teachers.

For example, although the more effective teacher, Ms. Nickles, consistently rated her own ability to use the effective practices outlined in AIMS as higher than the researchers' ratings of her observed use of these practices, she identified similar patterns of strength and weakness as the observers. Her self-reported use of practices ratings fell on average between 2 "just need to refine" and 3 "very successful" at midyear, and her scores were lowest in the classroom instruction category. Classroom instruction also received the lowest scores on the observers' ratings for Ms. Nickles. By spring, she had higher self-reported use of practices ratings in both atmosphere and instruction practices, and the observers' ratings corresponded with the improvements they observed in her instruction. That her self-reported use of management practices did not increase, the area in which the observers noted declined, suggests that she was at least aware that she had not grown in her management skills over the year.

Triangulation of beginning teachers' survey data and their interview responses supported the comparison of beginning teachers' self-report AIMS scores and observers' AIMS scores, indicating that the less effective beginning teachers were less accurate in their self-assessments about their strengths and weaknesses than the more effective beginning teachers. For example, one of the more effective beginning teachers, Ms. Jackson, and both of her mentors reported in interviews that student discipline (i.e., classroom management) was one of her biggest challenges during the year. These comments were consistent with the researchers'

AIMS evaluation, which, especially in the spring, cited her management skills as less effective than her instructional practices or classroom atmosphere. In contrast, the less effective beginning teacher, Ms. Lindsey, did not express a need for support and seemed unaware of important challenges. One of Ms. Lindsey's final interview comments highlighted this, as she noted that the mentoring meetings were "...redundant for [her], although some teachers might need this." Although Ms. Lindsey said in her interview that she appreciated the support of her school-provided mentor, she also claimed she did not really need her mentor at the beginning of the year, except when dealing with difficult parents. At the end of her first year of teaching, Ms. Lindsey believed that her biggest challenge was with organisation and planning of instruction. However, the researchers' AIMS ratings showed that her observed classroom atmosphere and management practices were in the poor range while her instruction was in the typical range (see Table 7). Ms. Lindsey did not seem to be aware of the areas that she most needed to improve or the extent to which she had room for improvement.

Another example of the inaccurate self-assessment of teaching effectiveness came from the weakest teacher at the end of the year, Ms. Smith. Ms. Smith expressed disbelief to the first author when she was not nominated for a teaching award at her school, even telling her school-provided mentor that she could not believe that one of the researcher-provided mentors was the teacher who won the district teaching award. Her comments demonstrated that her ability to accurately evaluate the relative quality of teaching practices was doubtful, especially given that the teacher who won was the second most exemplary teacher mentor in this study.

3.2.5. *Openness to mentoring*

The results of the cross-case analysis also suggest that the more effective beginning teachers were more accepting of, or open to, the mentoring they received than the less effective beginning teachers, who appeared to be somewhat resistant to mentoring. The less effective teachers tended to communicate with their mentors less frequently than the more effective teachers (as previously described in Section 3.2.1), and they also had difficulty "connecting" with their mentors. For example, one of the least effective beginning teachers, Ms. Smith, reported rarely meeting with her school-provided

Table 7
More effective versus less effective beginning teachers' observed and self-reported use of effective teaching practices

Mentee	AIMS category	Mean	Fall observed AIMS score	Spring observed AIMS score	Change in AIMS score	Spring self-reported use	Inflation of spring self-reported use
Nickles	Atmosphere	Mean	2.00	2.00	.00	2.90	.90
	Instruction	Mean	1.60	2.20	.60	2.60	.40
	Management	Mean	1.80	1.60	-.20	2.50	.90
Jackson	Atmosphere	Mean	1.90	1.80	-.10	2.80	1.00
	Instruction	Mean	2.10	2.20	.10	2.60	.40
	Management	Mean	2.20	2.10	-.10	2.20	.10
Thomas	Atmosphere	Mean	2.10	2.20	.10	2.70	.50
	Instruction	Mean	1.90	2.10	.20	2.30	.20
	Management	Mean	1.90	1.60	-.30	2.50	.90
More effective teachers	Atmosphere	Mean (SD)	2.00 (.10)	2.00 (.20)	.00 (.10)	2.80 (.10)	.80 (.26)
	Instruction	Mean (SD)	1.87 (.25)	2.17 (.06)	.30 (.26)	2.50 (.17)	.33 (.12)
	Management	Mean (SD)	1.97 (.21)	1.77 (.29)	-.20 (.10)	2.40 (.17)	.63 (.46)
Smith	Atmosphere	Mean	1.90	1.60	-.30	2.70	1.10
	Instruction	Mean	2.10	1.70	-.40	2.40	.70
	Management	Mean	1.80	1.30	-.50	2.40	1.10
Lindsey	Atmosphere	Mean	2.20	1.70	-.50	2.60	.90
	Instruction	Mean	1.70	1.80	.10	2.20	.40
	Management	Mean	2.40	1.60	-.80	2.80	1.20
Lockmaster	Atmosphere	Mean	1.30	1.60	.30	2.90	1.30
	Instruction	Mean	1.40	1.40	.00	2.40	1.00
	Management	Mean	1.90	2.10	.20	2.80	.70
Less effective teachers	Atmosphere	Mean (SD)	1.80 (.46)	1.63 (.06)	-.17 (.42)	2.73 (.15)	1.10 (.20)
	Instruction	Mean (SD)	1.73 (.35)	1.63 (.21)	-.10 (.26)	2.33 (.12)	.70 (.30)
	Management	Mean (SD)	2.03 (.32)	1.67 (.40)	-.37 (.51)	2.67 (.23)	1.00 (.26)

mentor Ms. Jenson, except occasionally over lunch in the teachers' lounge. In addition, Ms. Jenson reported that she had trouble connecting with Ms. Smith because Ms. Smith seemed "very defensive." In contrast, one of the most effective beginning teachers, Ms. Jackson, reported that she sought further assistance with writing instruction, not only from her researcher-provided mentor, but also from another teacher in her school, in addition to her official school-provided mentor. In summary, the more effective beginning teachers seemed more open to critiques and even sought suggestions from mentors and other teachers.

4. Discussion

The primary result of this study is a grounded theory analysis about factors related to the change potential of mentored beginning teachers. Consistent with previous research, management practices tended to be difficult to change for all teachers once routines and expectations were set in this first week of school (Bohn et al., 2004; Evertson & Smithey, 2000), even with a number of mentor communications around management issues. More positively, the use of effective instruction practices shifted in the positive direction, with three of the beginning teachers increasing their use of effective instructional practices. Perhaps this is because instruction was the most common type of classroom practice discussed in mentoring. Instruction may be more concrete and easier to discuss than issues more closely related to personal attitudes and emotions, such as classroom atmosphere practices (e.g., expressing caring, beliefs about who can learn, use of vocal tone, etc.). Consistent with this possibility, classroom atmosphere practices were the most stable for all six beginning teachers; gains and declines in this area of practice were all quite small.

Despite identifying no consistent differences in beginning teachers who either did or did not participate in the supplemental mentoring programme focused on effective teaching practices, some interesting patterns did suggest areas that may be helpful in supporting beginning teacher changes, with these identified by contrasting the teachers who were more and less successful in improving their classroom practices throughout their first year of teaching. Our results suggest that four elements are key for facilitating successful change outcomes for beginning teachers participating in mentored induction programmes. Two of these key elements

reside in the beginning teachers and two key elements reside in the mentors.

4.1. Mentoring differences

The mentors of the more effective beginning teachers in this study had more experience as mentors and were more effective teachers than the mentors of the less effective beginning teachers. In essence, they had more to offer their mentees. Log data showed the discussions between the more effective beginning teachers and their mentors were focused on substantive issues (i.e., instruction and management). Perhaps, though, the act of logging their interactions itself was instrumental. Either way, the interactions between the more effective beginning teachers and their mentors seem to reflect the greater openness of these beginning teachers and the high competence of the mentors, though the causal direction of the relationship cannot be determined. In general, these results are consistent with Wang and Odell's (2002) conclusion that quality mentors need to have expertise in teaching as well as competence in mentoring. Studies by Stallion and Zimpher (1991) and Evertson and Smithey (2000) also support this conclusion.

Stallion and Zimpher (1991) conducted a study with the primary objective of testing the benefits of mentor training on mentee teacher change related to classroom management. Their study also provides evidence that mentor training may be an important component to an effective mentoring programme for beginning teachers. They concluded that mentor teachers' own knowledge base was vital in transferring such knowledge to their mentees. In contrast, the mentors in the current study were not provided with any extensive training in mentoring, and although some of the mentors were more effective teachers than others, this knowledge base alone was not necessarily sufficient to make them effective mentors.

Another study specifically details mentor-training activities in relation to a mentor's ability to work with beginning teachers. Evertson and Smithey (2000) compared a formal mentoring programme with informal mentoring in a quasi-experimental design over the first half of a school year. Their findings suggest that mentors need skills and knowledge about mentoring. The training provided to some of the mentors seemed to help them systematically focus on practices such as management, planning, and problem solving. Whether such

training could have better prepared the mentors in the current study for working with the less effective teachers, however, cannot be determined. In addition, whether such training would be sufficient in the absence of the mentors being effective teachers themselves is also an open question.

4.2. *Beginning teacher differences*

Our data analysis suggests that the accuracy of teachers' self-assessments of their use of effective teaching practices also may play a role in the effectiveness and development of beginning teachers' classroom practices. Although, in general, teachers have a tendency to overestimate their abilities (Harris, 1975; McNeil & Popham, 1973; Pressley et al., 2003), the less effective beginning teachers in this study tended to be more optimistic about their abilities than the more effective beginning teachers, consistent with a general tendency of humans often to overestimate their ability when they know so little that they do not even have a basis for knowing when they are doing poorly (Kruger & Dunning, 1999). In general, the three least effective beginning teachers tended to be less realistic about the challenges they were facing and the types of improvements they needed to make than the more effective teachers. We find ourselves wondering at the conclusion of this study if differences in metacognitive awareness of one's own teaching and its impact might be a key variable differentiating beginning teachers who are more versus less likely to grow as they continue to teach. While we cannot determine causality from our study, the association was certainly there for the beginning teachers in our study. Maybe those who had more substantive discussions with their mentors were better able to rate their abilities. In England, case studies of mentoring for secondary teachers during their induction year were based on the dialogue between mentor and mentee pairs during formal review meetings (Harrison et al., 2005). Their results could be informative as we continue to consider how mentoring can help beginning teachers develop critical self-evaluative reflective practices.

In addition, the less effective beginning teachers in the current study seemed less open to their mentors' criticisms. On the other hand, at the end of the year, the more effective beginning teachers were more open to input and tended to communicate more with their mentors. The researcher-provided

mentor who was paired with a less effective beginning teacher summed up the beginning teacher's resistance when asked about her recommendations for future mentoring programmes. She suggested that the research team offer supplemental mentors "...to people who want to put in the effort. If you are going to resent it, then don't do it. You are wasting time, taking the experience away from another possible participant. At least come open minded. [My mentee] didn't act like she wanted to be at the meetings—what you get out of it is what you put in it." It is clear from this mentor's statement that the attitudes of the beginning teacher mentee are important to the outcomes of a mentoring relationship.

However, the attitudes of both mentees and mentors may be an important aspect of the mentoring relationship because they are interactive by their very nature. In the context of this study, it is impossible to disentangle whether the negative attitude of the beginning teacher heightened the negative attitude of the mentor or vice versa, as it is possible that the mentor's construal of her mentee as "wasteful" and "closed minded" might have negatively impacted her mentee's attitudes. Just as teachers' expectations of, and attitudes toward, their students may impact their students' classroom outcomes (Rosenthal & Jacobson, 1968; Woolfolk & Brooks, 1985), a similar phenomenon may occur in the course of mentor–mentee relationships. Most likely, the effects on one another over time are bidirectional (Vallacher & Nowak, 1997), but additional research is needed on this aspect of mentor–mentee relationships.

4.3. *Implications for future research*

In summary, our results suggest that, in order for beginning teachers to take advantage of mentoring programmes, they should be open to critiques and suggestions, and they should have sufficient self-reflective, metacognitive skills to process, contemplate, and use the information provided. Most importantly, our grounded theory analysis suggests that beginning teachers' skills in openness and metacognition interact with the skills of the mentors. In particular, our results indicate that the amount and content of mentor–mentee communication is important, as well as that mentors demonstrate highly effective teaching practices. Highly effective teaching practices enable mentors to model effective practice for beginning teachers to observe

and provide a broad repertoire of effective teaching skills that may be used for suggestions, examples, and problem-solving during mentor–mentee discussions.

Further data collection and analysis could result in a grounded theory model of how mentors and beginning teachers, as well as their characteristics and behaviours, interact to provide optimal opportunities for beginning teachers' professional development. The themes revealed in the analyses of this current study, meanwhile, provide information for potentially improving mentoring programmes and provide avenues for future investigations. In particular, this study highlights the need to investigate ways to promote competent mentoring and to facilitate beginning teachers' abilities to fully utilise the skills of competent mentors.

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