MENTORING FOR SUCCESS: ACCOMMODATION STRATEGIES FOR ELLS

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ABSTRACT
We investigated the extent to which a seven-week action research mentoring project would help two junior high school science teachers to feel more confident and successful in their abilities to use accommodation strategies to support the English language learners (ELLs) in their classes, and consequently to increase their ability to assess more accurately the curricular competence of ELLs. The participants completed pre- and post-study questionnaires and participated in weekly mentoring sessions on accommodation strategies. Results showed that both participants benefited from the mentoring project and felt an increased level of familiarity and comfort in implementing the accommodation strategies.

INTRODUCTION
Alberta, like many other provinces, has a growing number of students enrolled in K-12 programming who have English as a second language (ESL)\(^1\). As a result, it has become more important for teachers to develop skills in accommodating ESL students’ learning needs and assessing ESL students’ academic content effectively (Abedi, Lord, Hofstetter, & Baker, 2000). Although there are several opportunities for teachers to learn how to address

\(^1\) In the Alberta context, the domain (programming, teachers, and consultants) are referred to as English as a second language (ESL); the learners themselves are referred to as ‘English language learners’ (ELLs).
the needs and challenges of working with English language learners (ELLs) through professional development workshops and conferences available throughout the year, many secondary (grade 7-12) teachers in our school districts do not avail themselves to this type of training, choosing instead to receive regular professional development in content area subjects such as math, science, social studies, etc. Therefore, to develop greater capacity for instructing ELLs beyond ESL specialists and English teachers, a seven-week action research mentoring initiative was developed to enable two science teachers to learn to (a) feel more confident and successful in their provision of accommodations to meet the needs of the ELLs in their junior high science classes, and (b) more accurately assess their ELLs’ curricular competence. The following literature review captures some of the important elements and considerations relating to action research, ELL accommodation strategies, and mentorship programs that informed this investigation.

**LITERATURE REVIEW**

**Action Research**

Burns (2010) outlines the typical phases of action research (AR) as planning, action, observation, and reflection (based on Kemmis & McTaggart, 1988). The planning phase consists of identifying the problem in a particular context and developing an action plan to address it. In this study, the problem was identified by the first author as the need for professional development to promote teachers’ understanding of accommodation strategies to advance learning for English language learners (ELLs). The second phase of this project was designed to assist teachers in incorporating best practices to accommodate ELLs in their classes. To this end, teachers developed familiarity with and implemented seven critically informed strategies derived from the ESL literature. The third phase comprised the systematic observation of the strategic interventions and documented “the context, actions, and opinions of those involved” (p. 8). In the final phase of the study, the teachers critically evaluated their use of strategies. Reflection was dynamic and continued throughout the entire study. The four action research phases described above constituted one full cycle of transformation; one AR cycle was completed for each of the seven strategies presented.

**Accommodation Strategies**

Although there is a large body of research on accommodating students with special needs, there is limited research available on the use of accommodation strategies for ELLs in content area classes, specifically in secondary science classes. Because there is inadequate research to assist educational governing bodies in choosing the best way to support ELLs to demonstrate their curricular competence, many school jurisdictions have merely extended to ELLs the list of accommodations available to students with disabilities (Willner, Rivera, & Acosta, 2009). To address this issue, Willner et al. made five recommendations for improving the provision of accommodations for ELLs, including “teaching ELLs the course content, providing supports for the ELLs’ linguistic needs, making accommodation decisions as a team based upon the individual student’s needs, and providing opportunities for students to practice using the accommodations prior to testing” (pp. 697-698).
Science has its own unique language register that makes use of specialized vocabulary and syntax. ELLs often face difficulties in science because they are required to “(a) locate information in science texts; (b) interpret and apply that information; and (c) ask, answer, describe, explain, and make predictions about science - all in a language which is still in its developmental stages” (Carrier, 2005, p. 5). To make the content accessible to ELLs, teachers need to make specific accommodations for these learners. Therefore, Carrier (2005) suggests that literacy skills in science be achieved by encouraging teachers of ELLs to write specific language objectives that correspond to the curricular science objectives. In addition to teaching scientific content vocabulary, teachers need to provide additional vocabulary supports so ELLs understand that seemingly ordinary vocabulary, such as table, balance, float, shape, have different meanings, depending on the context in which the words are used (Short, Vogt, & Echevarria, 2011). Specific explanations of key academic language functions (e.g., hypothesizing, predicting, analyzing, interpreting) and the corresponding structures found in scientific writing are also needed, as the ways in which both written and spoken discourse patterns vary cross-culturally in both form and content (Herrara, Murry, & Cabral, 2007).

The complexity of scientific writing also lies in the dense nature of the text. Complex sentence structures require additional attention and processing resources. Therefore, it is important to provide ELLs with extra processing time. By drawing ELLs’ attention to particular language structures, and providing them with additional supports such as sentence and paragraph frames, teachers can help their ELLs understand and master the academic structures typically found in science texts.

Additional strategies for facilitating the learning of new concepts and language skills for ELLs are to provide them with a wide range of presentation formats and learning tasks, and to allow them to use a variety of ways to demonstrate their learning (Short, Vogt, & Echevarria, 2011). Key visuals and graphic organizers such as bubble maps, Venn diagrams, decision making trees, cycle diagrams, etc. can be used to represent dense written texts and concepts in a simple, easy to read chart, graph, or diagram. These organizers can be used at any time during the learning process; for example, at the beginning of a lesson to activate background knowledge, introduce new material, and pre-teach vocabulary; during a lesson or as a group work activity; or after a lesson or unit as formative and summative assessment activities. Initially, ELLs with limited experience working in groups should be introduced to the concept of pair work, and then, as they feel more confident and comfortable working collaboratively they can be assigned to small, and finally, larger groups (Edmonds, 2009).

To accommodate ELLs’ language proficiency levels, they should also be provided with a variety of response methods and additional supports in order to assist them in demonstrating curricular competence. For example, ELLs can be provided with picture, bilingual, and learner dictionaries; a reader or computer text-to-speech assistance; a scribe; manipulatives; realia; extra time; and the opportunity to respond orally or submit taped responses for assignments and tests. If ELLs are allowed to use any of these accommodations when completing standardized tests, they need to be allowed to practice
using them in the classroom so they become comfortable with them before taking high-stakes tests (Kopriva, 2008; Willner, Rivera, & Acosta, 2009). Long answer assignment and test questions can be scaffolded by providing sentence starters and guiding questions to break down the task into manageable sections (Reiss, 2008, p. 135). Questions should also be modified to minimize unnecessary linguistic complexity (Abedi, 2004).

Tiered questions can also be used to support ELLs in demonstrating their curricular competence. “Tiering is the use of the same curriculum material for all learners, but adjusted for depth of content, the learning activity process, and/or the type of product developed by the student” (Richards & Omdal, 2007, p. 429). For example, if the learning outcome is to compare and contrast the processes of mitosis and meiosis, the lower proficiency learners could be provided with key vocabulary and simple phrases and asked to use the words to fill in a Venn diagram; the middle proficiency ELLs could be asked to fill in a Venn diagram without provision of the added vocabulary supports; and the higher level ELLs could be provided with a three-paragraph essay frame and asked to fill in the missing information.

The strategies described above have been identified as effective instructional strategies for supporting English language learners in K-12 classrooms. They formed the basis of the interventions that were planned for the cycles of this action research project.

**Mentoring**

An examination of studies on mentoring and collaborative mentoring programs for content area teachers of ELLs (e.g., Davison, 2006; Holloway, 2001; Musanti & Pence, 2010) shows support for and evidence of the benefits of mentoring as long as the participants feel they are participating in a program that will enhance their already proficient teaching skills.

Davison (2006) worked with content area and ESL teachers to learn about, draw conclusions from, and propose a framework or possible plan to develop and create institutional change in the teachers’ collaborative practices. Her main goal was to change the ESL programming at one site from an ESL pull-out program to a more integrated teaching model where there was “content compatible and content obligatory language development” (p. 457). Davison found that the participants in her study moved through several stages of collaboration, from rejection of the collaboration model altogether with the participant subsequently withdrawing from the program, to recognition that the program provided some of the participant’s most successful teaching experiences.

Musanti and Pence (2010) presented the findings of a three-year, longitudinal study “that focused on helping in-service teachers to better address the needs of ELLs in their classroom” (p. 74). The authors found that the teachers, including the co-facilitators, felt uneasy when having observers in their classrooms. These findings were partially attributed to “the institutional conditions of teaching, in which teachers are isolated from others by the walls of their classroom” (p. 82). Therefore, the authors suggested that to enrich and strengthen teachers’ pedagogical knowledge and skills, schools need to foster teachers’ involvement in collaboration and mentoring work. Furthermore, Musanti and Pence found
that resistance, although frequently considered negative, has the potential to be positive, as resistance may provide the impetus for reflection on practice and in turn be a motivator for change. The authors also discovered that the need to learn about the process of collaboration was central to the experience and development of the collaborative teams because, in the end, the relationships of the teachers were more important than the knowledge they possessed. Therefore, spaces needed to be created in which teachers can “interact, team teach, and educate each other” (p. 87).

Holloway (2001) found in his study of teachers in New Brunswick that “a very high percentage of both new (96%) and experienced (98%) [teachers] felt that they benefitted from the [opportunity to be involved in Holloway’s mentorship] program” (p. 86). The program provided opportunities for experienced teachers to both support the learning of new teachers and to become inspired to improve their practice from the new ideas and energy of the new teachers. The mentor teachers also commented that they felt that the new teachers respected them for their expertise and experience. Holloway concluded that participation in a “focused, systematic mentoring program has a positive influence on the performance of new teachers and is advantageous to mentors as well” (p. 86).

Batt (2008) suggests that “in consideration of the aim to leave no English language learner behind, ESL and bilingual educators need the collaboration and assistance of mainstream teachers and administrators to help meet the many challenges inherent in educating ELLs” (p. 41). Wideman (2011) maintains that isolation impedes learning “because learning is usually very much a social process, professional learning happens collaboratively and collegially by teachers working together” (p. 53). Franks, Jarvis, and Wideman (2011), in their editorial on capacity building in collaborative action research, highlight the importance of working collaboratively to improve teaching practice. They contend that “for teachers, collaborative inquiry involving cycles of planning, action and reflection is exhilarating and rejuvenating” (p. 2).

As the findings of these studies suggest, the benefits of mentoring include the development of shared understanding and a collaborative teaching environment. Moreover, these activities have the potential to build synergistic relationships and pool teachers’ strengths to promote transformative practices that better meet the needs of ELLs in their classes.

**The Current Study**

Having taken into account the current body of knowledge with respect to action research, accommodation strategies, and mentorship, we decided to investigate if a short-term mentoring project would be beneficial to two of the first author’s colleagues in their efforts to teach and assess ELLs. In this case study, we explored the following questions:

1. What was the impact of a seven-week mentoring project on two junior high science teachers’ understanding and application of accommodation strategies for ELLs?
2. To what extent did the integration of accommodations in the teachers’ practices affect their perceptions of their ability to meet the needs of the ELL students in one of each teacher’s science classes?
METHOD
A seven-week mentoring project was carried out by the first author and evaluated using a mixed-methods approach.

Participants
Purposive sampling was used to select two science teachers at a local junior high school to participate in this study. Both teachers, who will be referred to as Anne and Bob (pseudonyms), had taught science for more than three years, and their decision to participate in this study was entirely voluntary. Anne taught in both special needs and mainstream programs; Grade 8 science classes comprised 50% of her full-time schedule. Fifty percent of Bob’s teaching time was spent with Grade 7 and 8 mainstream science classes. Both Anne and Bob met with each of their science classes for five 50-minute periods per week and followed the program of studies. The junior high at which the participants taught had an ELL student population of almost 50%, consisting of both Canadian and foreign-born ELLs. The ELLs in Anne’s class came from four different linguistic groups and those in Bob’s class from eight different linguistic backgrounds, making up 24% and 41% of the students in their respective classes.

Questionnaires
To ascertain teacher knowledge of accommodation strategies and information on the use ofaccommodated assessment strategies in the teachers’ secondary science classrooms, the researchers created pre- and post-study questionnaires. The pre- and post-questionnaires contained both Likert-type and open-ended questions on teaching qualifications and experience; teachers’ perceptions of their familiarity, comfort, confidence, use and impact of accommodation strategies and of their ability to accurately assess the curricular competence of ELLs. In response to additional post-mentoring questions, which were administered one week after the final mentoring session, the participants reported the impact of the mentorship project on their ability to confidently accommodate the learning needs of the ELLs in their science classes. Quantitative data gathered from the Likert-type questions provided valuable perceptions of the potential usefulness of mentoring programs in enhancing the teaching and assessment practices of teachers in other secondary science classes.

Procedures
Accommodation strategies. Seven accommodation strategies (discussed more fully below) were chosen because of their diversity, their relative ease of implementation, and their potential to make the greatest impact on ELL performance, based upon the research literature and the experience of the authors.
1. Pre-teaching of/focus on key vocabulary and language structures.
2. Graphic or advance organizers to assist students to understand the content and lesson flow.
3. Use of oral questions directed to different collaborative groups to assess the comprehension of concepts.
4. Use of simplified language structures to make content more accessible to learners (for examples, see Abedi, 2004, 2006).
5. Provision of a reader or auditory support.
6. The addition of scaffolding to long response items to guide students’ responses. For example, a “more complex essay question is reduced to a variety of prompts that require only short answers” (Herrera, Murry, & Cabral, 2007, p. 40).
7. Use of tiered questions to provide means for learners of different English language proficiency to demonstrate their understanding of the curriculum. Teachers can do this by creating different forms of the same question. For example, lower proficiency students could complete a matching activity of terms and their definitions; higher proficiency students could write a definition for each of the terms provided or complete a cloze activity; and more advanced students could provide both a definition and an example.

Mentoring sessions. The first author worked jointly with the two participants for one hour each week for seven weeks and recorded and transcribed all sessions. The participants were actively involved in creating the context for and the scheduling and length of the learning cycle in which the strategies were to be implemented. They also had input into the selection of the strategies and the order in which they were introduced. Throughout the action research cycle, the participants were encouraged (a) to discuss, with the first author and their colleague, issues that arose as the strategies were implemented, (b) to identify practicable solutions, and (c) to share candidly their feelings and perceptions regarding effective strategies for changing their practice. During these sessions, she assisted the participants in developing their awareness and confidence in understanding and implementing accommodation strategies for the ELLs in their science classes. Each week, one new strategy was presented in a sample lesson and practiced, and questions about how to implement the strategy in classes were discussed. After the first week, the sessions began with a discussion of the teachers’ implementation of the strategy presented at the previous meeting. At this time, the participants had an opportunity to seek clarification regarding the previous strategy and to share perceptions of their implementation experiences. Then, a new strategy was introduced and the first author, Anne, and Bob discussed how it could be implemented in lessons in the coming week.

Data Analysis
Pre- and post-study questionnaire responses were entered into Excel, analyzed, and compared graphically. We also employed the steps outlined in Braun and Clarke (2006) to thematically analyze the transcripts and the first author’s reflections from the weekly mentoring sessions.

RESULTS AND DISCUSSION
Mentoring Sessions
Strategy 1 - Pre-teaching of/focus on key vocabulary and language structures. Both teachers felt the strategy had merit and offered benefits for their students. Bob found that the intentional focus on vocabulary and language structures helped to bring focus to his lessons. Some of the ways in which participants worked with the new vocabulary included: regular check-ins through the practice of ‘do-nows’ or ‘entrance slips’ assigned at the beginning of a class to get the students thinking about what they had learned about a topic
in previous lessons, and ‘short-point-in-time’ or ‘elbow partner’ reviews (Reiss, 2008, pp. 81-82) as the teacher was presenting new concepts. Anne provided additional synonyms and real-world examples for concepts and commented, “[Then] I saw more green lights, and light bulbs [in my students’ eyes].” Bob “began a review for a test by taking all of the vocabulary for the upcoming test and lumping it together” to show the connections between terms. He began by writing the first concept, *thermometers*, on the board and asking, “What do we know about thermometers?” [He] put [students’] points down and pretty soon [they] had it all down....” Bob thought that using a graphic organizer to connect the terms and concepts in this review was “pretty cool.” These practices assisted students in making connections between the science vocabulary and the manner in which it should be employed in real-world oral and written applications. Bob also implemented this strategy with other science teachers to change the format of a unit test. To place a greater focus on vocabulary, they eliminated long answer items and increased the number of multiple-choice, matching, and true/false test items. Many ELLs were reported to have performed better on this than on previous tests.

Both Anne and Bob used a model that included graphics, in addition to terms and definitions. Anne took a previously created master document and organized it in a manner that was more logical and intuitive for the presentation model used in class. On the document, she also placed pictures that were familiar to both her ELLs and her other learners. To support the inclusion of specific language structures and an understanding of new vocabulary, the teachers were encouraged to include in their vocabulary work an example of what a term was not, as well as a sentence frame in which students would find the word in their studies. In response to this suggestion, Anne stated, “I like [the idea of] saying what it isn’t, because then [the students] have to think more carefully about what it is.”

The participants’ experiences with this strategy appeared to have positive results, which is consistent with research (Chamot & O’Malley, 1986; Verplaetse & Migliacci, 2008) in this area. Both participants used a variety of graphic organizers and vocabulary development models, such as the Frayer model (Frayer, Frederick, & Klausmeier, 1969; see Think Literacy for examples). In addition, they examined the language structures necessary for students to effectively communicate their science knowledge in a manner congruent with our cultural norms (Herrera, Murry, & Cabral, 2007). At the conclusion of the mentoring project, both participants made a commitment to continue to develop lessons that focused on the key vocabulary and discourse-specific language structures necessary to support their learners in communicating the scientific concepts learned, in both oral and written forms.

**Strategy 2 - Use of graphic or advance organizers.** The use of graphic organizers was identified as a natural means for Anne and Bob to present new information and review concepts. Initially, Bob experienced some challenges with this strategy because he perceived it as a simplification of the material. He also voiced concerns over the difficulty in finding templates to fit specific contexts. As a result, both participants were encouraged to use the fishbone diagrams (e.g., [http://www.enchantedlearning.com/graphicorganizers/](http://www.enchantedlearning.com/graphicorganizers/))
fishbone/d), bubble maps, KWLH charts, and Venn diagram prototypes (Cleveland, 2005, pp.71-79; Reiss, 2008, pp. 141-143), and to consult online resources and programs such as Inspiration to develop their own. Bob commented, “These are going to work perfectly and dovetail nicely with what I have already been doing.” In a later mentoring session, Anne commented, “I used this graphic organizer stuff and I loved it, and I think [the students] did, too. It made things make more sense for me...I think it rocks.”

During the mentoring session the following week, the participants reported continued use and success with graphic organizers. Bob mentioned that he had used a graphic organizer somewhat successfully for a review activity. Anne added that note-taking had been easier for her science students because “when the students are taking notes using the bubble forms, they think that they are getting away with writing a lot less, when they are really doing the same amount as before. It’s just broken down differently.”

Ultimately, Anne and Bob were able to use graphic organizers effectively in a variety of forms for both assessment for and of learning tasks, as they “help learners make connections between their existing knowledge” (Herrell & Jordan, 2008, p. 35) and new information. As with Strategy 1, the participants indicated that they would continue to develop their skills in implementing graphic and advance organizers.

**Strategy 3 - Use of oral questions directed to different collaborative groups to assess the comprehension of concepts.** During the third mentoring session, the participants were introduced to the strategy of using collaborative groups to check for understanding and provide opportunities for students to talk about science, thereby practicing science language and discourse structures. Some of the collaborative learning opportunities suggested were Numbered Heads Together, Think-Pair-Share, Gallery Walks, and Jigsaw activities (e.g., [http://olc.spsd.sk.ca/DE/PD/instr/strats/jigsaw/](http://olc.spsd.sk.ca/DE/PD/instr/strats/jigsaw/)) (Hill, 2010). These types of tasks provide opportunities for students “to collaborate and cooperate with each other on activities and problem-solving tasks” (Allison & Rehm, 2007, p. 15). The participants thought that Jigsaw activities would allow weaker learners to be supported by their expert group and to therefore feel more confident that they understood the concept that they would be responsible for sharing with their own table/home group. In addition, they felt that these collaborative activities would be useful in science because everyone would be able to choose a concept, study it, and then share it with their classmates.

Both Anne and Bob felt that these strategies had some promise for preparing for a lab or sharing data. However, when we discussed this strategy at the following mentoring session, they concluded that the activity required more structure to enhance effectiveness.

Unlike the previous two strategies, the use of collaborative groups appeared to need much more direct teaching and coaching before it could be utilized effectively. As Allison and Rehm (2007) pointed out, and as Anne found when implementing this strategy, some students may “get off-task and spend more time socializing than working” (p. 15). To alleviate this situation, it would be beneficial for teachers to explicitly teach students how to work with each other, outlining the structure, guidelines, and timelines, as well as the
expected outcomes, at least initially. Therefore, Anne provided a question sheet to guide the work of future learning groups. Short, Vogt, and Echevarria (2011) maintain that “[i]n order to acquire academic language, students need lessons that are meaningful, engaging and provide ample opportunity to practice using language orally” (p. 12), and that “[g]rouping students in teams for discussion...increase[s] student engagement and oral language development” (p. 12). Despite initial challenges, the participants committed to continue to work with this strategy.

**Strategy 4 - Use of simplified language structures to make content more accessible to learners.** This strategy appeared to both teachers to be very logical, and it was beneficial for some of the ELLs in Anne’s classes. Bob noted the need to be aware of the colloquial and figurative language that we [naturally use in speech] and that could be very confusing for ELLs. He stated, “Simplified language has the most potential, as far as I’m concerned, simply because it comes down to vocabulary. If I bring it down just to the words they need, then they are more likely to connect [with the learning]” and, as a result, demonstrate understanding of the science concepts. In reviewing a test that he had recently given to a class, Bob commented, “I thought some of the questions were unnecessarily difficult, and I think that [simplifying questions] is something that I would like to work more on.”

Herrera, Murry, and Cabral (2007) provide useful guidelines for teachers creating content area tests for ELLs. One of their suggestions is to “control the language level of the test unless that is the curricular area being assessed” (p. 189), as “linguistically complex forms (e.g., unless, although), clausal constructions, and negatives often lead to misinterpretations of the question” (p. 189). They also advocate the avoidance of ambiguous or vague prompts. In addition, these researchers recommend that teachers “[k]eep questions short and specific to lessen the impact that differences in reading speed and fluency have on indices of content learning” (p. 189). Similar suggestions are presented in Abedi (2004, 2006), although Abedi includes figurative/idiomatic language and low-frequency vocabulary incidental to the material being assessed. Abedi (2004) also recommends that all students be given content-area assessments that “use clear language that is free of unnecessary complexity” (p. 31). Both participants in this study felt that the simplification of text structures was a strategy that they could incorporate into their assessment for and of learning practices.

**Strategy 5 - Provision of a reader or auditory support.** This strategy had previously been utilized by some of the teachers in this school because it is an accepted assessment accommodation for provincial assessments for students with special needs. It was presented as an accommodation strategy that could be beneficial for the ELLs as well. Because this strategy is quite simple, the participants did not have many questions with respect to implementation; rather, their questions addressed the logistics of providing this accommodation in a manner that would be manageable. Anne made a commitment to provide either a reader or a recording of the test items for the students on the next few tests and mini-tests, in order to see if the students’ results improved once they became comfortable with this accommodation. She concluded that if schools are going to provide these test accommodations for ELLs on assessments of learning, then it would be beneficial
for the students to get used to using them before they were used for testing situations. Bob also expressed a willingness to implement this strategy in the future.

**Strategy 6 – Addition of scaffolding to long response items.** The participants indicated an interest in incorporating this strategy in their assessment for and of learning activities. The first author suggested that, instead of simply eliminating more complicated multi-step questions, additional structure or scaffolding be implemented to help students complete long answer responses, using tiered supports. Bob said that he could try to break complex, long answer questions into smaller units so that students could answer a series of questions to achieve the same end; otherwise, he surmised, the students might simply skip the long answer questions because they were unsure of how to answer them. Anne stated that she could use pictures with definitions as support for some of the more complicated questions. Both teachers felt that these supported response styles would likely assist their ELLs at different language proficiency levels in demonstrating their curricular competence.

**Strategy 7 - Use of tiered questions.** Both participants were willing to continue to work together to implement this strategy even after the formal mentoring project had ended. Although Science teachers frequently work together to create unit and final exams, designing tiered assessments for students within a given class is not a common procedure. The participants felt that tiered questions with differentiated response styles would enhance their ELLs’ ability to demonstrate their curricular competence. Due to time constraints, such as professional development days and the other academic demands, there simply was not enough time to implement this strategy. Both participants, however, expressed an interest in implementing it in the future.

**Questionnaire**
The data presented in Figures 1 and 2 were gathered through the pre- and post-mentoring questionnaire conducted seven weeks apart.

**Figure 1. Teacher 1 (Anne) Pre- and Post-Questionnaire Results**
**Figure 2. Teacher 2 (Bob) Pre- and Post-Questionnaire Results**

Note: 1 = not at all; 9 = very much/frequently
AA = accommodated assessment
AFL = assessment for learning
AOL = assessment of learning
UA = unaccommodated assessment

**Familiarity and comfort with accommodations.** Anne’s responses indicated that, over time, she felt both more familiar and more comfortable with the accommodation strategies and that the support she received through her participation in this mentoring project was beneficial. In addition, her responses indicated that the opportunity to be involved in this mentoring program enhanced her implementation of accommodation practices. She said, “At the beginning, I thought I was doing a decent job [supporting ELLs]. Now that I see all the strategies I can use, I feel like I could still be doing more.” Both Anne and Bob’s understanding and feelings of competence and familiarity with accommodation practices increased over time. These findings appear to support those of Batt (2008), who identifies the benefits of ESL and mainstream teachers working together “to help meet the many challenges inherent in educating ELLs” (p. 41), and of Lee (2005), who suggests that there is a need to “help practicing teachers enhance their beliefs and practices in integrating science with literacy for ELLs” (p. 508).

**Confidence in and extent of the use of assessment accommodations for and of learning.** Throughout the study, in her assessment for learning practices (AFL), Anne used a variety of quick check-ins (Reiss, 2008, pp. 81-83), including entrance and exit slips (which review the previous day’s lesson, or in the case of an exit slip, the material covered that same day). Prior to the study, Anne reported that she felt comfortable using the following accommodation strategies for assessment of learning (AOL): an educational assistant as a reader, simplified language, extra time, a scribe, and a computer. In her post-questionnaire, she noted an increased level of comfort with both the language simplification and reader accommodation strategies. With respect to assessment accommodations for assessment of learning, Anne stated that in the future the accommodated assessment strategies that she...
would continue to provide were extra time (as needed); simplified language and visuals; and diagrams and pictures on all exams, review booklets, handouts, and quizzes.

Prior to the study, Bob indicated that he felt more confident in his use of accommodated assessment strategies for assessment for learning purposes than for his assessment of learning practices (see Figure 2). However, even after the relatively short mentoring program, he reported feeling more familiar and more confident with the accommodation strategies for both purposes. With respect to assessment for learning practices, Bob appeared to focus initially on vocabulary development and oral activities to check for understanding. In addition, he used graphic organizers, charts, and visuals in assessment for learning tasks. For Bob, an understanding and recognition that the linguistic complexity of questions presented a barrier to ELLs’ ability to demonstrate curricular competence changed his perspective with respect to his evaluation and selection of items for assessment for learning and of learning. This focus is echoed in the findings of Abedi (2009) in which he notes that “linguistic modification has been shown to be effective in reducing the performance gap between ELLs and non-ELLs” (p. 196). Although Anne appears not to have experienced any measurable growth in feelings of confidence in using these strategies, Bob showed an improvement in confidence in using accommodation strategies in his assessment for and particularly his assessment of learning.

**ELL anxiety.** Both participants perceived that the level of anxiety experienced by learners when faced with unaccommodated assessment was higher than in instances in which the assessment accommodations were in place. On the post-study questionnaire, Anne indicated that the ELLs felt increased anxiety with unaccommodated assessments, which could indicate that her students were becoming more comfortable using accommodated assessment strategies. She noted that her ELLs were less anxious when the reading level of test items was at their level. Bob perceived that his ELLs felt an increased level of anxiety with the accommodated assessment practices that he had recently begun to implement; this he asserted, could indicate the necessity for both teachers and students to develop further familiarity with accommodated assessment.

**Supports.** Both participants acknowledged to differing degrees the benefits of having an ESL specialist in the school, working collaboratively with a science teacher, and being involved in a mentoring program to enhance the implementation of accommodation strategies in their science classes. Anne stated that although these factors positively affected her ability to implement the strategies in her science classes, the opportunity to be a part of a mentoring program was most powerful; it “made [her] aware of some of the little things that could be added [to her] lessons without spending long periods of time creating new materials.” She said, “I was very pleased how easy some strategies were to use in my pre-existing lessons.” Bob indicated that the opportunity to work with another science teacher was most beneficial for him, as this connection increased the opportunity for him to be involved in collegial discussions and the sharing of ideas. This reflects Musanti and Pence’s (2010) discussion of the benefits of creating opportunities for teachers to interact and share knowledge. Bob’s responses also indicated that the
mentoring program enhanced his implementation of accommodation strategies because it “introduced methods [he] may not have used on [his] own.”

Although Anne felt that the presence of an ESL specialist in the school supported the practice of utilizing accommodation strategies in her class, Bob did not. In his experience, the ESL specialist’s role, until the mentoring project began, had been to provide semi-structured pull-out programming for the weakest ELLs in the school. As a result, the ESL specialist had not had the opportunity to mentor teachers in implementing classroom accommodations. Bob also felt that the impact of pull-out instruction for the ELLs in his class was not beneficial; rather, he stated the need for an ESL program for ELLs whose language skills are not yet adequately developed for successful integration into regular classes.

Both participants provided insightful suggestions as to how an ESL specialist’s skills could be utilized in a more effective manner. Anne suggested that the ESL specialist work with different departments or subject areas to incorporate accommodated assessment practices in both assessment for and of learning tasks. This could bring department-wide understanding and adaptation of current best practice in working with ELLs. Both participants asserted that there is a need for more ESL specialists or educational assistants with teaching English as a second language (TESL) training who could work in classrooms to support ELLs in the classroom, (i.e., utilizing a model of ESL instruction generally referred to as a push-in or co-teaching model [see McClure & Cahnmann-Taylor, 2010]). In addition, the participants felt that the ESL specialist could provide ongoing support for accommodations that take more time to implement, such as audio or text-to-speech support for assessments, or the oral assessment of lower literacy learners. Anne also felt that an ESL specialist could provide support for learners by responding to ELL-related questions in the school. The most costly suggestion, although perhaps the most beneficial (Davison, 2006; Musanti & Pence, 2010), was that ESL specialists and content area teachers work collaboratively to implement research-based best practices and adapt current teaching practices to accommodate ELLs in their content area classes. Although it may not be feasible to place an ESL specialist teacher or educational assistant with TESL training in each class to assist content area teachers to support ELLs with accommodation strategies, it would be practicable to increase the numbers of individuals with TESL training who would be available to work collaboratively with content area staff members in each school.

**CONCLUSION**

The participants in this action research study had the opportunity to work with an ESL specialist, the first author, who supported them in incorporating accommodation strategies to better meet the learning needs of their ELLs. This mentoring opportunity empowered the teachers by enhancing their ability to support the diverse ELL learner needs in their classrooms through the implementation of seven research-based best practices.

The data suggest that for these two science teachers, the opportunity to be involved in this mentoring program was beneficial, as it enhanced their understanding of best practices and encouraged positive change and commitment to transformational practices. The self-
perceptions of the participants indicated that they felt more aware of accommodation strategies and the use of accommodated assessment in both assessments for and of learning. In addition, participants both thought that there were capacity building benefits to receiving mentoring and exploring the use of accommodations with another science teacher. The action research project also contributed to the teachers’ and mentor’s professional development and knowledge of effective instructional strategies.

However, little if any gain was shown in the extent to which the integration of accommodations in the participants’ practices affected self-perceptions of their ability to meet the needs of the ELLs in their classes. This may have been the result of the relatively short period of time that the participants had to become acquainted with and practice using the strategies that were introduced. Nevertheless, their willingness to continue to implement and reflect upon accommodation strategies supports their belief that these practices would further benefit their students. By sharing their learning with others, they will be able to extend the culture of learning established as a result of this project.

Similar collaborative and adaptive action research mentoring projects should also be conducted with in-service teachers in elementary and high school settings over a longer period of time. Such initiatives are essential for both core and elective courses across grade levels. ESL specialists should be readily accessible in all schools to mentor and collaborate with teachers and educational assistants in reflecting on and implementing best practices. Only through working together and sharing responsibility for ELLs in our schools will we as ESL specialists and K-12 educators successfully build the necessary capacity to meet the diverse needs of ESL learners.

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